McGUFFEY'S

[illegible]

C II. oδ
19

22102079978

15038

Med
K11735

Stewart's Extra Subject Series.

FOOD:

ITS

COMPOSITION AND NUTRITIVE VALUE.

BOOK I.

BY

BARBARA WALLACE GOTHARD,

EDITRESS OF THE 'FOREIGN SETTLER AND EMIGRANT,'
MEMBER OF THE LECTURERS' ASSOCIATION, ORGANIZING COOKERY LECTURER FOR
SCHOOLS AND CLASSES; ALSO LECTURER ON COOKERY, HYGIENE, ETC.,
AT THE PRINCIPAL LITERARY AND SCIENTIFIC INSTITUTIONS
OF GREAT BRITAIN.

LONDON:
W. STEWART & CO., THE HOLBORN VIADUCT STEPS, E.C.
EDINBURGH AND GLASGOW: J. MENZIES & CO.

8/130

25840 938

CONTENTS.

CHAP.		PAGE
I.	Food: its Principles, Classification, Sources,	5
II.	The Composition of Vegetable Foods,	8
III.	Vegetable Foods and their Nutritive Values,	21
IV.	Vegetable Foods: Leaves,	26
V.	Vegetable Foods: Flowers, Roots, etc.,	31
VI.	Vegetable Foods: Fruits, Gourds, and Fungi,	36
VII.	Vegetable Foods: Cereals, Barks, etc.,	39
VIII.	Animal Foods and their Nutritive Values,	42
IX.	Animal and Mineral Productions, Water, etc.,	46
	Appendix,	50

WELLCOME INSTITUTE
LIBRARY
Coll. welMOmec
Call
No. QU

Stewart's Extra Subjects.

FOOD, ITS COMPOSITION AND NUTRITIVE VALUE.

FIRST BRANCH.

CHAPTER I.

FOOD: ITS PRINCIPLES, CLASSIFICATION, SOURCES.[1]

1. Food is derived from the Ger. *Futter*, and signifies all solid and liquid substances used for the support, nourishment, and health of the body—*i.e.* all substances that can be digested or taken into the system to repair the daily waste of the body, which is termed, in physiological science, 'the process of assimilation.'

2. The principles of food are composed of various substances or properties, which the science of chemistry has discovered. The chief of these are—

Albumen.
Acids.
Alcohol.
Amygdalin.
Asparagin.
Benzoin.
Berberine.
Brimstone.
Butyrine.
Cafeine.
Calcium.
Casein.
Carbon.
Cellulose.
Citric Acid.

---

[1] The following abbreviations will be used throughout the work:—L. = *Latin*; Gk. = *Greek*; Ger. = *German*; I. = *Italian*; Sp. = *Spanish*; Fr. = *French*.

Chlorine.
Chondrin.
Dextrine.
Dextrose.
Fibrin.
Gelatin.
Glucose.
Glutin.
Grape Sugar.
Gum.
Glycerine.
Hæmoglobin.
Hydrogen.
Iron.
Inosite.
Kreatin.
Lactose.
Lævulose.
Legumen.
Lignose.
Lime.
Lupulin.
Manite.
Malic Acid.
Margarine.
Mucilage.
Mucin.
Morphia.
Narcotics.
Nitrogen.
Oleine.
Osmazone.
Oxygen.
Palmatin.
Pectose.
Pepsin.
Piperine.
Phosphates.
Potash.
Rheime.
Silica.
Sodium.
Starches.
Stearine.
Sucrose.
Sulphates.
Solanine.
Tannin.
Theine.
Theobromine.
Vitelline.
Volatile oils.
Yeast.

These substances are again divided into groups or classes, under the titles of—I. **Nitrogenous** or *plastic* foods—substances producing flesh and muscle; II. **Carbonaceous** or *respiratory* foods—substances giving heat; III. **Mineral Matter**, which is last, but not the least valuable element in the foods of animal economy, whether of the human or brute creation.

3. The most simple, and decidedly the most important class of foods used by the human race, are the productions of the **Vegetable World.** Man can exist without *animal*, but not without *vegetable* foods. These dietetic substances are found—(1) In the stems, leaves, and flowers of plants; as in rhubarb, lettuce, hops. (2) Esculent roots, tubers, bulbs, etc.; as arrowroot, horse-radish, turnips, potatoes, onions. (3) Fruits, gourds, fungi, etc.; as strawberries, vegetable marrows, mushrooms. (4) Cereals, seeds, and nuts;

as wheat, peas, cocoa-nuts. (5) Barks, lichens, algæ; as cinnamon, Iceland moss, Carrageen moss.

4. Foremost amongst the productions of the **Animal Kingdom** in general consumption in this country ranks (1) Flesh meats; as beef, mutton, pork. (2) Fish; as herrings, trout, salmon, crabs. (3) Poultry, game, and wild animals; as turkeys, hares, hedgehogs, etc. (4) The productions from animals; as cow's milk, cheese, hen or plover's eggs, rennet, etc.

5. From the **Mineral Kingdom** we obtain phosphates, salts, etc., as phosphate of lime (a bone-making substance), common salt.

6. There are liquid foods, of which **Water** is the principal, although it enters more or less into the composition of all solid foods.

CHAPTER II.

THE COMPOSITION OF VEGETABLE FOODS.

1. **Cellular Tissue,** or *Cellulose* (from L. *cella*), is a white fibrous substance composing the basis of plants. It is insoluble in water or spirits, but in sulphuric acid it is quickly dissolved. It is akin to *starch* in its chemical composition. In the earlier stages of its growth it is digestible, but in old vegetables it assumes a woody, stringy character, and firmer in the tissue. From this we glean an important fact, plainly demonstrated too, viz. that the foods we obtain from the vegetable world in the shape of leaves, stalks, roots, etc., are more digestible when young, before the cellulose has become hard tissue. An almost pure type of cellulose is exhibited in cotton and pith. Its character slightly alters in different plants; for instance, in the common nettle or the flax plant it is close and hard, whilst it presents another feature in the beetroot or potato, where we find it loose and softer: therefore the pulp of the two latter would in any stage of growth be more digestible than either of the former. Cellulose is capable of being changed into its own weight in sugar by the application of certain acids.

2. **Starch** is the next most important element we find in the composition of vegetable foods. Starch is in appearance white, glistening, granulated, heavy rather than bulky, and crisp to the touch. The purest type we have is arrowroot. Each tiny grain of starch is covered by a membrane or sac. It is insoluble in

cold water, but on the application of water heated from 200° to 212° F., the interior portions of the little granules begin to swell, extending the outer membranes to their utmost limits, finally bursting the envelopes and mixing freely with the water; it then forms a glutinous, semi-opaque mass, which we term in household economy *starch.* The word starch, by the way, is derived from *stark* = stiff, firm, as it is used for stiffening linen. It is computed that there are over 75,000,000 lbs. of starch used in Great Britain weekly for laundry purposes alone. Starch foods require thoroughly mixing with the saliva during the process of mastication, when certain chemical changes take place, transforming the starch into *dextrose* or *grape sugar.* Such portions as are not thus converted are indigestible. It will be seen by this that starch is, like cellulose, capable of a chemical change, forming sugar. This has been perfected in Germany, where there are large factories carrying on a lucrative trade by transforming into golden syrup, starch (procured from the horse chestnut) and sulphuric acid.

3. Sucrose (L. *saccharum*), *pure sugar*, is the next important substance apparent in our analysis of foods. We find saccharine matter present in the products of the vegetable, animal, and mineral worlds. Its value as a food is equal to starch, and like it, sugar is insufficient to support animal life without the addition of other principles. It is antiseptic, nutrient, demulcent, soluble in cold water. It is obtained for dietetic purposes in great quantities from the sugar-cane (*Saccharum officinarum*), cultivated in the West Indies, Brazils, etc. Also from the beetroot (*Beta vulgaris*), Europe and North America; maple (*Acer saccharum*), America; and various sugar grasses, such as the Imphee of Zululand, millet sugar grass of China, Egypt, etc. Maize or Indian corn (*Zea mays*), cut

whilst green before the time of inflorescence, yields abundant quantities, whilst the inhabitants of the tropics procure from the various *Palmaceæ* sugar for dietary purposes or fermentation, for the extraction of spirit or wine making. Sugar has been made from jute, pine shavings, and other like curious substances.

There are also classes of *sugars* of which *sucrose* is the chief or leading type. Amongst these may be mentioned *grape sugar*, *muscle sugar*, *manna sugar*, *malt sugar*, etc.

4. **Glucose** or **dextrose**, *grape sugar*, is not so soluble as sucrose, nor does it crystallize as easily. It is the substance we find coagulated or hardened in the pudding raisins of everyday use.

5. **Lævulose** is another branch of the *grape sugar* family. It is found abundant in honey and many ripe fruits. The grape sugars, although they play an important part in the assimilation of foods taken into the human system, are not so sweet as cane sugar. Glucose, or grape sugar, is rapidly formed when bread and cane sugar are eaten. All starchy and saccharine foods must be thus converted before assimilation takes place in the body.

6. **Lactose**, *milk sugar*, is that substance which imparts the sweet taste to milk. It is also capable of crystallization, and in that form is sold at the chemists, and chiefly used in the preparation of infants' foods. *Milk sugar* is soluble in water but not in spirits.

7. **Inosite**, *muscle sugar*, is found in the flesh of animals. It is crystalline when dried. Inosite gives to horse flesh the sweet taste it possesses.

8. **Manite**, **maltose**, etc., are varieties of *grape sugar*. Sugar, like the diamond, is composed of a large proportion of carbon ; thus, when heated to a white heat, and the air excluded, it assumes the properties of a very hard graphite, capable of scratching on glass.

9. **Caramel** is *carbonized* or *burnt sugar*, *i.e.* in the process of burning some of the water is evaporated, leaving the carbon principle more developed than in sucrose—greater, in fact, in bulk when compared in its former relation to the quantities of hydrogen and oxygen in its composition.

10. **Oleine** (Gk. *elaion;* L. *oleum*), one of the four proximate principles of fat (*oleine*, *margarine*, *stearine*, *glycerine*). Oleine is found in both animal and vegetable substances. Refined olive oil (*Olea Europea*) is the fairest type of oleine. Oils are of two kinds—*fixed* or *fat* oils, and *volatile* or *essential* oils. *Fixed* oils are chemically divided into two classes, viz. *drying* oils, *i.e.* those which will solidify or harden, as linseed and nut oils; *unctuous* oils, those which retain their liquid qualities, and do not become solid unless under the action of cold, as olive and rape oils. Unctuous oils become rancid by age. Fixed oils are relaxing and softening in their nature; volatile oils stimulating, anti-spasmodic. The fat of bacon and pork is chiefly oleine, hence its liability to turn rancid or rusty. Oleine is one of the great heat-givers. Its qualities are nutrient, demulcent, laxative, emollient. It is not soluble in water, is partly so in alcohol, and quite in ether. Oleine is the principal liquid component of butter.

11. **Margarine**, a fatty, solid substance. When olive oil is exposed to cold, little flakes are seen floating amongst the oil; this is chemically known as margarine. It is found in suet, etc.[1]

---

[1] *Oleo margarine*, from the 'Far West,' so well known to the American and English traders, is prepared from a mixture of (1) a large quantity of oil, 'adulterated' with forty or fifty per cent. of cream; this is prepared by country dairymen, and requires an experienced, clever 'buyer' to detect it. (2) Oil is adulterated with just enough cream to allow of its being churned, in the proportion of one part cream to twenty of oil.

12. Palmatine takes its name from the orange-coloured substance which forms the solid portion of the oil extracted from the kernels of a palm nut named *Elais Guincensis.* Palmatine quite dissolves in boiling ether, but its crystals are insoluble in water, alcohol, or cold ether. It is the solid fat found in butter, and is more frequently classed by chemical analysts as a proximate principle of fats and oils rather than margarine.

13. Stearine is the white, crystalline, semi-transparent, scale-like substance one sees glistening on the surface of a basin of dripping when cooled, especially the dripping from roast loin of mutton. It forms a large proportion of the solid matter of fixed fats. It is insoluble in water, but dissolves in ether and boiling spirits.

14. Glycerine (Gk. *glukus*, sweet) is the last mentioned and most useful of the four proximate principles of fats and oils. As *cellulose* is the basis of all plants, so *glycerine* is the foundation of all fats and oils. It combines quickly with water, and can be dissolved in alcohol. It has useful solvent powers, such as dissolving starches, acids, etc. Glycerine is a viscid liquid, quite colour-

---

This is a patent 'butter' easily detected. The oil used is that produced generally from seeds of the cotton plant, 'cotton waste,' etc. (3) The representative of salt butter made from cleansed fats and oils. It is stated that over 2,000,000 lbs. per year of fat are drawn from the refuse of dead animals (cats, dogs, etc.) in Paris alone, and sent to be converted into butter; whilst from Barren Island, the great emporium of bone dust, etc., near New York, many thousand tons per year are sent out. These vat skimmings, when cleansed, find their way into our markets as prime Devon butter, salt butter, butterine, and cheap lards, etc. The constituents of these butter substances, when ready for market, are not injurious to health, and have a nutritive value equal to the pure produce of cow's milk. They keep sweet much longer than butter, and turn quite rancid on decaying; never sour or acid in the first stages, like the lactic particles in milk butter.

less when pure. As its name signifies, it is sweet to the taste, leaving a slight metallic, burning sensation in the mouth a few seconds after it has been swallowed. It is much used in cases of chest, throat, and lung diseases, as an internal remedy, whilst a similar principle, called *vasceline*, obtained from petroleum, is used outwardly. Glycerine is invaluable in cases of bronchitis, as it nourishes and heals. In an impure state this substance, as first extracted, is slightly coloured from the presence of extraneous matter. In its crude state it has many useful applications. Glycerine is rendered fit for domestic and medical purposes by the process of distillation. Animal charcoal is used for filtering it and clearing it from ammoniacal and volatile impurities. It is largely used to adulterate milk when mixed with water.

15. **Bee's Wax**, eaten frequently with virgin honey, has the same constituents as fats and oils, but lacks the basis, viz. glycerine.

16. **Dextrine** is a gum-like substance found in all starch foods that have been heated above 300° F. Bread, beer, biscuits, and several patent foods which have been exposed to the action of heat during their preparation, contain dextrine. It is semi-transparent, and, like gum, soluble in water. A preparation of malt, flour, and sulphuric acid produces dextrine. This is known and sold as *British gum.*

Starchy foods are, during the process of digestion, changed for a period into dextrine.

17. **Mucilage** is another gum-like substance obtained from vegetable foods. It is chiefly extracted from seeds, roots, bulbs, and barks. The chemical constituents are similar to starch, and their heat-giving powers are equal. Mucilage is obtained by infusion of linseeds, marsh mallow roots, onions, etc.

18. **Gum** (Fr. *gomme*), a vegetable product almost like

dextrine in appearance and character. The value of gum, mucilage, and others of the same class of substances as nutritive agents has been doubted by some analytical chemists, whilst by others the qualities of animal gelatine have been attributed to it. It takes, however, a standing point between the starches and sugars. It is found in many kinds of food, and no doubt plays its useful part in the human economy as an aliment. Gum is soluble in water, forming a viscid substance. It is insoluble in spirits or ether. *Gum Arabic* is the general example: it is transparent, tasteless, inclining from yellowish white to brown.

19. **Mannite** (Syrian *mano*, a gift) is another of the gum or semi-sugar-like substances. It is very sweet to the taste, of strong odour, and crystallizing on extraction from the manna juice, of which it is the essential principle. It will dissolve in water, but will not, like sucrose and other sugars, ferment.

20. **Malic Acid** (L. *malum*, an apple), a valuable acid in fruits and vegetables. For instance, the strawberry, pear, mountain ash, apple, etc., all contain malic acid. It is a blood purifier, food solvent, and has slight nutritive qualities. *Rheine* is an analogous substance found in rhubarb.

21. **Citric Acid** (L. *citreum*, citron) is that substance which gives the sour taste to lemons, citrons, and oranges. This acid is very wholesome, but some medical men ascribe to it injurious effects upon the system. When taken in large quantities, it is said to induce irregular palpitation and disease of the heart.

22. **Acetic Acid** (L. *acetum*, vinegar) is the most common vegetable acid. Vinegar is just acetic acid diluted with water. It is found ready formed in organic matter, but it may be produced by certain substances, such as alcohol, being mixed with azotized organic matter, exposed to the air to be oxygenized, when it rapidly

becomes converted into acetic acid. The white wine vinegar one frequently purchases is in many cases guiltless of vinous extraction, and is obtained from 'destructive wood distillation,' which produces a poisonous acid named *pyroligneous acid;* this is diluted with distilled water, and sold as the best French white wine vinegar. True acetic acid is obtained from malt and wine. It has a sharp, sour taste, and in its pure state will cauterize the mouth. It has the power of changing to a reddish colour vegetable blues.

23. **Tartaric Acid** is the organic acid principle found in grapes. It is obtained in a crude state in wine casks, and termed by some *argol.* It is the basis of various salts. When purified it forms *cream of tartar.*

24. **Alcohol** (Arabic *al*, the; *koohl*, any volatile substance) is a colourless,limpid,stimulating,pungent liquid, having an aroma or bouquet. It never freezes, although it can be rendered gelatinous by exposure to intense cold. It boils at a much lower degree of temperature than water. It has only one source, *i.e.* fermentation of saccharine matter. A popular medical journal gives the following description of the nutritive qualities of alcohol:—'Liebig, Bouchardat, and others of our scientific men affirmed that alcohol was an aliment. However, in 1860, Lallemand, Perrin, and Duroy, men of known chemical ability, denied the statement, asserting that it passed unaltered through the system. These differences led to minute researches by very eminent analytical chemists, who ultimately discovered that alcohol, taken in small doses, was really consumed in the animal economy, and of decided nutritious value. It was also a source of warmth, and yielded materials for assimilation and renewal of tissue, increasing pulsation where it was sluggish. On the other hand, when taken in large quantities, the greater portion was eliminated unchanged, the pulsation became low and

hard, and the temperature of the body lessened. It is for the latter cause it is given in fever cases. A good study of the negative side of the question can be obtained from our learned friend Dr. Richardson's excellent little works on the subject.'

25. **Theine, Cafeine, Theobromine,** are also stimulants, found respectively in tea, coffee, and cocoa, which produce a direct effect on the brain,—most powerful, however, in tea and coffee,—although their influence on the muscular action of the heart and skin are exactly opposite. Tannin is also a vegetable product found and extracted from barks, fruits, leaves—as oak bark, grapes (skin), tea leaves. It is astringent and preservative, renewing the muscular tissue.

26. **Asparagin** is the crystalline principle. It is valuable as a blood purifier and diuretic.

27. **Nitrogen** (Gk. *nitron*, nitre; *gennao*, I generate), a transparent, colourless gas, inactive when in a free state, but when in combination with other substances it displays energetic properties. It is an essential, proximate principle of animal and vegetable bodies. Nitrogen enters largely into the composition of all nutritive foods; animals cannot exist on food which does not contain nitrogen. Again, all the nitrogenous foods are solid. Nitrogen is one of the gases constituting the atmosphere, so is a most important substance to animal life.

28. **Albumen** (L. *albus*, white), contained in animal and vegetable matter. It is a white, viscid substance, distinguished by becoming a solid when certain degrees of heat are applied,—for instance, in making beef tea we find a sort of curd, brown in colour, floating in the soup-like substance; that is mostly coagulated albumen. The white of an egg represents the purest type of albumen. The *serum*, or whitish liquor in the blood, is nearly all albumen. It is in the juice of flesh, sap of

vegetables, seeds, etc. All foods containing albumen are known as *albuminoids*. It is calculated that 3000 lbs. of blood yield 110 lbs. of albumen for manufacturing purposes.

29. **Protein** is the foundation of all animal and vegetable cellular tissue. Casein, albumen, and fibrin are spoken of in some chemical works as proteinaceous substances.

30. **Fibrin** (L. *fibra*, a thread) is found in both blood and muscular tissue. When free it resembles long elastic filaments. It arranges itself into fibrous bundles. In blood drawn from living animals, the fibrin begins to coagulate on exposure to the atmosphere. The value of dried flesh, on analysis, was found to be almost identical with blood in its component parts. The value of blood fibrin as an article of restorative diet has long been known and prescribed by the Continental doctors, and in Paris particularly, where in the early morning, crowds of consumptive patients may be seen eagerly waiting for the draughts of warm blood dealt out at the *abattoirs* or slaughter-houses.

31. **Phosphorus** (Gk. *phos*, light; *phoreo*, I bring) occurs in organic matter. It abounds in cereals, seeds, roots, fruits, and fish (particularly in shell-fish), as wheat, barley, peas, beans, potatoes, apples, mackerel, lobsters, etc. Phosphorus is a great brain feeder taken in natural quantities and in combination with the foods in which it exists, but the constant use of this substance in the form of pills, etc. and as a brain stimulator is not good, being apt to produce disease if the habit is persevered in. Phosphorus is found in blood, bone, albumen, nervous tissue, hair, etc., therefore we should so select our food that some portion of it should daily supply this very important element to the body.

32. **Carbon** (L. *carbo*, charcoal). On referring to the chemical symbols at the end of this work, it will be

seen that carbon is one of the most important of organic elements, and is an elementary substance on which, in a greater or less degree, most of our foods are based. It is present in the vegetable, animal, and mineral kingdoms. A diamond is pure carbon crystallized. The greater part of coal consists of carbon. It is found, also, in combination with oxygen, in small quantities in air and spring water, and is in this form called *carbonic acid.* One of the most beautiful laws of nature is the absorption of carbonic acid by plants as food when cast out by animals, this substance being fatal to human but conducive to the welfare of plant life. Carbon is black, dense, opaque, tasteless, infusible, insoluble, inodorous, conducting heat badly and electricity freely. It is a digestive, antiseptic, and disinfectant agent. It is used in the forms of biscuits and lozenges as a remedy for indigestion. It is valuable as an antidote in cases of vegetable poisoning, especially when mixed with boiling water and taken as hot as possible. It counteracts animal putrefaction.

33. **Hydrogen** (Gk. *hudor*, water; *gennao*, I produce) is an elementary substance; it is gaseous, colourless, tasteless, and capable of liquefaction under certain circumstances. It is the lightest substance known, and enters into the structure of most of the articles used as daily food. In combination with oxygen it forms water.

34. **Oxygen** (Gk. *oxus*, acid; *gennao*, I produce) is the most abundant of all the elementary substances. Eight-ninths of water is composed of oxygen and one quarter of the atmosphere. It is the most important element we have, as without it animal life could not exist. There is only one substance in which it does not unite, and that is fluorine. It is thrown out by plants when under the direct influence of the sun's rays. It gives acidity to the substances in which it predomi-

nates. It exists nowhere in a pure state. Pure oxygen would be too stimulating for animal life.

35. **Sulphur** (L. *sulphur*, brimstone) is a valuable mineral substance, hard, brittle, and yellowish in colour. It is present in albumen,—the simple test of this is that it turns silver a greenish black. A spoon of this metal, used in an egg after it has been boiled, turns of this colour and discovers the presence of sulphur. It is a non-conductor of electricity: when heated or rubbed, it gives off a peculiar smell. It is the most powerful disinfectant known, and the only one which will effectually destroy the germs of infectious disease; whilst in the form of *flowers of sulphur* it is a certain cure in cases of typhoids, small-pox, diphtheria, etc.

36. **Casein** (L. *caseus*, cheese). This is the nitrogenous principle found in milk, and forms the larger proportion of the substance known as curd. It somewhat resembles albumen in its composition. It is found in the yolk of eggs. A similar substance, known in chemistry as *vegetable casein*, is found in peas, beans, etc. Animal casein is not so easily digested as the vegetable substance which it resembles. It repairs the waste of muscle, and, taken in small quantities after meals, is supposed to act as a digestive agent. Acids quickly coagulate it, by, for instance, separating the butter and whey from the curd of milk.

37. **Narcotic** (Gk. *narke*, stupor). This principle is found in many vegetable foods, as in lettuce, onion, hops, etc. It is sedative and soothing in its effects, giving a sleeping tendency, while it lulls or softens pain; it also renders the process of digestion slower. It is useful if taken in the natural way, *i.e.* through the medium of foods such as the onion, especially to brain workers; but if extracted from the poppy, or any other such opium or narcotic-yielding plant, and taken in the

form of a drug, it is hurtful in the extreme to both mind and body. The use of a narcotic ought not to be indulged in without medical advice and in cases of disease.

38. Tannin (L. *tann*, an oak). This is a valuable astringent property found in vegetable substances. Its action on animal matter is well known by the process of tanning the raw hides of animals to preserve them from decay, by which means they become leather. The effect of tannin on the human system when taken in the form of food—as in tea, for instance—is to repair the waste of the tissues, and prevent decay of the body to a certain degree. Tannin also retards digestion; therefore, if taken in combination with flesh meats, it might produce feelings of dyspepsia, but with fish it renders the meal more satisfying, as fish is much more rapidly digested than flesh foods.

CHAPTER III.

VEGETABLE FOODS AND THEIR NUTRITIVE VALUES.

1. In the volume which it is intended shall follow this, the subject of the action of nitrogenous, carbonaceous, and mineral foods, with their several effects on the human system, will be duly considered. At present we will study the nutritive value of individual articles of food and their composition.

2. Vegetable foods, being man's first and original food, will be taken as a primary example. And by way of introduction, we shall describe briefly the parts of a vegetable.

3. It is rather difficult to distinguish between the lower types of the animal and vegetable kingdoms. Physiologists disagree, with regard to some of the substances, as to which kingdom they pertain. Yeast is an example of this. Plants are made up of cellulose (see chap. ii.), and in the lower tribes there are few distinctive parts. They simply form a combination of leaves called the *thallus*, as in lichens and algæ. If we examine plant life a few grades higher, we find very distinctive features which it is impossible to mistake.

(1) We have the **Root**, which fixes the plant to or in the ground, from whence it draws its nourishment by imbibing liquid foods from the earth, which are drawn up through the cellular tissue, and afford one of the means of plant life. Roots have a variety of forms. The root of a tree generally spreads itself like the upper branches of the tree, whilst it throws out

little fibres called *rootlets.* What we generally term the root of a potato is really an underground stem, and the fibres which come from the *tubers* or extended parts of the stems are really the roots.

(2) **Stems** are the central portion of the plant, and are found under ground as well as above. The suckers of the mint plant and couch grass illustrate these underground stems. They are composed of bundles of fibre, being either long, string-like collections of tissues, or deposited in circles round a pithy cylinder. In a tree, the stem, being very large, is termed the trunk. This is encased by *bark*, which is cellular tissue dried and become hard from age. When a tree or plant has small substems, they are termed *branches.*

(3) **Leaves** grow from a small appendage attached to the branch called the *leaf-bud.* They assist in the feeding of the plant, and act as its lungs, absorbing certain substances from the air and so nourishing it; whilst by means of the leaf waste substances are emitted by the plant useless to its vital energy, but of infinite value to the economy of animal life. Leaves consist of two parts, the *stalk* and *blade.* The latter has a variety of forms. It has in some plants a complete network of ribs and veins covering it, in others these run in parallel lines.

(4) **Flowers** consist of several parts: the outermost green scales are termed the *calyx ;* each part of this is called a *sepal;* within this is the *corolla*, which is the chief feature in the flower, viz. the coloured part. Then we have the *petal*, which is a single division of the corolla.

(5) **Fruits.** When the flower dies, the little fruit-bud at the end of the flower nearest the stem begins to enlarge and shape itself into the fruit, which is a shield for the seeds, the foundation of new plants when put into the earth.

Now all these parts of plants are used as food, sometimes whole plants and at others only portions, as described in the first chapter (paragraph 3).

4. The **Stems** which we use as food are various. There are celery, seakale, asparagus, rhubarb, etc.

5. **Celery** is a plant which grows naturally in this country and in many parts of Europe. It is found wild in sandy soil near the sea, and has a very bitter taste, and when the leaves are rubbed emits an unpleasant odour. People cultivate this plant in their gardens as an article of food. When thus transplanted and cared for, it loses its rank taste and smell, becoming a favourite vegetable food as well as a most healthful and useful article of diet. Celery possesses many valuable qualities. It contains nitrogenous and carbonaceous substances, whilst its medical properties as a blood purifier are undoubted. Celery is utilized in every portion. The best known and most familiar parts are the stalks, which, when blanched and mature, are used raw as a relish, or in salads, soups, or gravies. The leaves are dried to be used as pot herbs; so also are the roots and seeds, from which flavourings, syrups, and confections are made. The two latter form the foundation of some valuable medicines used for gout and dropsy. The peculiar flavour of celery is due to an essential oil, which abounds more in the seed than any other portion of the plant. It is this volatile oil which renders this plant so valuable as a stimulator and a medicine. *Celeriac* is a sort of celery with a much thicker root, almost like a turnip in roundness and hardness. It contains narcotic essence like celery, but the celerine or volatile oil principle is less developed

5. **Seakale**, like celery, is a plant found in its wild state growing on the sands in the neighbourhood of the coast. It is fairly nutritive, and contains carbonaceous matter; but its chief value lies in the quantity of potash and like mineral substances, which renders it desirable

for people of delicate digestion and other internal derangements. The analysis of seakale varies very much, but a fair average is given below in conjunction with other stem foods.

6. **Asparagus** is another of the indigenous seaside plants which we cultivate for the sake of the stem and leaf-bud. It is rich in alkaloid principles, and a very valuable although rather expensive vegetable to purchase. It is not unlike seakale in its composition, but the substance known as asparagin found in this plant renders it most valuable as a dietic. It is eagerly sought after by the domestic cat. Cats have been known to eat the young shoots off, and thus destroy whole beds of asparagus. This no doubt arises from their instinct leading them to detect its useful properties. Asparagus is possessed of a goodly share of nitrogenous matter, and rather more carbonaceous matter than either celery or seakale. It loses its saccharine matter by chemical change after being cut for some time; therefore, like all green vegetables, it is the better of having sugar added in the process of cooking. The last example we shall take of stem foods is

7. **Rhubarb**, a plant which is largely cultivated in this country, and is one of the most useful acid-yielding vegetables we have. It is not very nutritious, but its alterative qualities render it much sought after. A teacupful taken before breakfast in the springtime is recommended by most professors of hygiene, as it tends to thin and cool the blood; and when cooked, its semi-liquid state renders it very easy of absorption into the system. Its digestive qualities are well known. The root of the rhubarb cultivated in our gardens is often used to adulterate the well-known astringent tonic and aperient medicine known as *Turkey rhubarb*, which is brought from Russia and the East. *Rhubarb root* is one of the most valuable medicines in the pharmacopœia (or list

of medicines), ranking next to sulphur in point of value. *Rheine* is the principle to which this plant owes its peculiar aroma and taste. When cooked, it is slightly stimulating and restorative in quality.

	Celery.	Seakale.	Asparagus.	Rhubarb.
Nitrogenous matter,	7·4	4·3	4·2	1·4
Carbonaceous matter,	4·2	2·0	5·0	3·6
Volatile oil, . . .	·9	·1	·3	·1
Mineral and Cellulose,	5·4	3·5	6·1	2·6
Water, ...	82·1	90·1	84·4	92·3
	100·0	100·0	100·0	100·0

CHAPTER IV.

VEGETABLE FOODS: LEAVES.

The leaf family used as food is so numerous that it will require a chapter to itself.

1. **Basil.** This is an aromatic plant used as seasoning for soups, stews, and other savoury dishes. It is supposed to act as a stimulant to the digestive organs, and a palliative to harsh or acid foods. It is an annual easily cultivated. The leaves may be dried and bottled for winter use. Basil tea is used in cases of colic. Basil vinegar is an excellent method of preserving the leaves and extracting their flavour for salads, stews, etc.

2. **Bay.** These leaves are used as flavours for both savoury and sweet dishes; its flavour, when extracted, is slightly stimulant, aromatic, and narcotic.

3. **Beech.** The leaves of this tree when young and tender are a wholesome and agreeable vegetable when boiled and eaten like cabbage, etc. They are somewhat astringent in their properties, and contain a good deal of sugar and other nutritive matter.

4. **Brussels sprouts,** a cultivated species of the wild cabbage containing less water than the cow and white-heart cabbages, but varying very little in other constituents. Brussels sprouts resemble miniature close heads of cabbage surrounding a thick stem. When well dressed they are esteemed a delicacy, not having such a strong flavour as many other specimens of the same tribe of plants.

5. **Burnet,** an aromatic herb used in dressing salads and for claret cup.

6. **Cabbage**, one of the most useful, healthful, and common leaf foods we employ as a diet. Cabbage is rich in potash, has good nutritive value, and, according to the land on which it is grown, contains often many valuable elements. For instance, a plant grown near Westbury, where iron abounds in the clay, returned a good percentage of that mineral. An analysis, with those of other valuable leaf foods, will presently be given.

7. **Chervil**, an aromatic, stimulating herb.

8. **Cresses**. *Garden cress* is a hot, pungent herb, stimulating to the digestive organs. *Water cress* contains iodine, and has almost similar qualities to the *land* or *American cress*, and cresses are extremely useful in diseases arising from blood poisoning and scrofula.

9. **Elder** leaves are used as a pickle; they are considered palliatives to the harsh effects of other vegetables, etc.

10. **Endive**, a plant cultivated for use as a salad, has a slightly bitter taste. It has a cooling effect on the system, and supplies it with valuable salts.

11. **Fennel**. This plant has a peculiar aromatic flavour and smell, also astringent properties; it is used in sauce with fish.

12. **Greens** and **Kale** (Scotch) are simple species of the cabbage plant. The leaves are drier, and contain less watery particles. Their value as foods is equal.

13. **Lettuce** is used either as a salad raw or dressed, after the manner of seakale and spinach. It is more valuable as a food when in the raw state, as the water absorbs many of its best qualities. It is nutritive, narcotic, and more readily digested than any other uncooked vegetable.

14. Leaves of the **Lemon tree** are flavourers. Those of mustard, marigold, mint, marjoram, and nasturtium are used as salads and flavourers.

15. **Nettles** contain valuable principles; infusions from the leaves and the tops, dressed as spinach, are constantly used by people in the country. Nettle tops are superior to spinach.

16. **Parsley**, a common pot herb most excellent in its effects and properties. It is stimulating, nourishing, and gives a certain amount of tone to the internal organs. The roots of some varieties are largely cultivated on account of their medicinal properties. This plant contains a valuable essential oil, from which it gains its aromatic smell and slightly pungent taste.

17. **Radish**, a useful garden plant; the leaves, when boiled, are an excellent vegetable for table use. The pods, dressed as French beans, are also good when young. The leaves are also used in salads. They have a slightly pungent taste, but are milder and more readily digested than the root.

18. **Savoy** is one of the cabbage tribe having crimped or curled leaves. The heart is white and hard. It is a winter plant. Its composition is the same as Brussels sprouts, being a little less watery than the common garden cabbage.

19. **Spinach.** This plant we find wild on the sea shores of the south coast. It has strongly developed alkaloid principles and valuable salts. Beet leaves are the common substitute sold in the London markets as spinach. They are milder in taste than our wild or even true spinach, which is a plant of Asiatic origin.

20. **Sorrel** is not half so much used in this country as it ought to be. The leaves are excellent in salad, and when boiled make a most delicious sauce for roast mutton or boiled beef. Country people find it growing wild. The rich use it very frequently as a second-course vegetable, served on toast. It is highly nutritious and valuable in the spring of the year, when

acids are so necessary to the system. Buttercup leaves also make good salads.

21. Samphire is a plant growing on the rocks of the sea shore. Its leaves are sometimes used boiled, at others pickled. It possesses peculiar pungent qualities, and is said to be good as a preventive of consumption. The plant possesses saline and alkaloid principles, together with nitrogenous matter, and starchy or gluey substances.

22. Savory and Sage are two good adjuncts used as seasonings. They are both astringents. *Syringa* leaves are also exquisite as flavourers, harmless, and of delicate flavour for puddings, etc.

	Cabbage.	Lettuce.	Water-cress.	Tea.
Nitrogenous Matter,	2·4	2·1	3·0	24·8
Carbonaceous Matter,	6·3	4·8	2·1	55·2
Mineral & other Matter,	7·1	3·1	9·3	13·7
Water, ...	84·2	90·0	85·6	6·3
	100·0	100·0	100·0	100·0

23. Tea. The leaves are well known as being used for infusions in this country. They possess stimulating qualities. The analysis of tea varies very much, but a mean average is given. It possesses a valuable principle called *theine*, a brain stimulator, although it acts as a lowering agent to the pulsation of the heart, increasing skin action by opening the pores. Many people grind their tea before infusion, so as to extract

the nitrogenous matter. Analysis shows the leaves to be nutritious, but they are generally wasted, and would require much cooking before being utilized.

24. **Turnip tops** are more nourishing than the root or bulb of the vegetable.

25. **Tarragon** and **Thyme.** These pungent leaves are used principally as flavourers for savoury dishes, salads, etc.; their essential oils are supposed to assist the digestion of food.

CHAPTER V.

VEGETABLE FOODS: FLOWERS, ROOTS, ETC.

1. **Brocoli**, like the cauliflowers, are of the cabbage tribe. They are cultivated for their flowers, which are dressed and eaten as a vegetable. They are more delicate and less watery than many of this tribe of plants.

2. **Camomile**, a flower used for infusions. It has medical properties which are stimulant, tonic, and antispasmodic.

3. **Elder flowers** are used for the manufacture of wine and for flavouring, whilst cowslips and primroses are used in puddings, there being nutritive matter found in the petals, and a delicate stimulating oil can be extracted. They contain a quantity of a sugar resembling mannite in its composition.

4. **Saffron.** This is a preparation from the stigmas of the crocus plant. It is used in immense quantities in Cornwall, where the famous saffron cakes are made. It is considered good for the blood, and at one time was a fashionable medicine. The petals of the marigold are often used to adulterate saffron. This substance is used to colour confectionery, jellies, etc. Orange flowers are used to obtain an essential oil much used in flavouring. The leaves of the orange plant yield an equal if not superior flavour, combining flower and rind as it were.

5. **Arrowroot**, the ground rhizoma of a West Indian plant. It is, when pure, considered the most perfect type of amylaceous or starch foods known.

The faultless method now obtained of separating the starch matter from corn-flour renders it equal to arrowroot in heat-giving and digestive qualities. Arrowroot contains few, if any, nutritive qualities. *Tous les mois* is similar.

6. **Tapioca** is a root food. It is obtained from the *manichot* shrub, which, on preparation, yields *cassava*, a meal from which the South American Indians make bread and also tapioca. The latter is nearly of the constituency of arrowroot, but having a trace of nitrogen, it is more life-sustaining. The root, when not prepared, is poisonous. This is dispelled by heat or frequent washing.

7. **Artichokes** (Jerusalem) are the tubers of a species of sunflower. They are somewhat akin to the potato, and, as will be seen by the annexed analysis, they contain decidedly more watery particles than the potato. Whilst they have not so much nitrogenous, they are richer in sucrose matter. Phosphorus is absent, but potash and salts present.

8. **Potato** is the most familiar household vegetable we have. It is also one of the most nutritious of root foods, lacking only fat or oil to render it a perfect diet in itself. This food has flesh-forming, heat-giving, and brain-feeding constituents, whilst it is rich in potash and blood purifiers. Its value as a starch yielder renders it popular as a cheap substance wherewith to simulate and adulterate starch and other foods, as arrowroot, sago, tapioca, maccaroni, and a variety of others of a similar type. Its analysis is subjoined. The stem, leaves, tuber, in fact all parts of the plant, possess a narcotic, poisonous principle called *solanine*. It is very imperceptible in the bulb, and disappears in the cooking or by the action of heat. This property has a direct action on the skin, and is used in cutaneous or skin diseases, being extracted from other portions

of the plant for this purpose. A spirit similar to that obtained from pine shavings and birch leaves is obtained from this vegetable by the addition of sulphuric acid, turning the starch into grape sugar (glucose or dextrose), and then extracting spirit therefrom, which finds its way into our markets as British brandy. The *sweet potato* and *yam* are also tubers; they are becoming better known in this country, but they are everyday vegetables in America. They are somewhat similar to our potato, richer in saccharine matter, and also having traces of volatile principles not present in the potato. They are not so rich in nitrogenous matter, and do not belong to the same class of plants.

9. **Beetroot.** Next in value as a food to the potato stands the *beet*, a variety of mangel-wurzel. It has a superabundance of saccharine matter, is rich in potash, has flesh-forming matter, but lacks the phosphorus which renders the potato so valuable. Sugar, spirits, potash, molasses, etc., are all obtained from the beet, which is a profitable and valuable plant.

10. **Parsnips** are an excellent root food, but require proper mastication or they are totally indigestible. These roots possess nitrogenous principles, and are rich in starch and sugar, possessing more of the latter than the potato. They also have a peculiar volatile principle, which gives to this root its taste and odour. Medicinally, this principle acts on the kidneys when they are sluggish. Parsnips are best mashed, as thus treating them assists the process of mastication and tenders the woody fibre, otherwise difficult to assimilate.

11. **Carrots** are not sufficiently appreciated as a vegetable food. They are as nourishing as most of the tribe of root (proper) vegetables, easily digested, and when gathered young are slightly laxative in their

properties. If old, and the cellulose tissue hardened, they ought to be mashed so as to assist the work of digestion. Carrots have many good properties; we find in them starch, sugar, albumen, and the volatile oil which gives the odour and taste peculiar to the root. This is called *carotine.* Carrots make stimulating and cooling poultices, when grated raw and mixed with ¼oz. charcoal, for ulcers, etc. The seeds are also used medicinally. Spirit is extracted from the root, and in some of the Continental villages the root is roasted and a beverage prepared from it just as we would use coffee berries.

12. **Turnips** are wholesome but watery articles of diet. When cooked the water ought to be expressed, and then we find good vegetable substance remaining, composed of flesh-forming, heat-giving, and other necessary substances. The younger the turnip the more delicate and digestible it will be.

13. The **Radish,** mentioned under the head of leaves, is a root much used in salads; when young it is more digestible than in the later stages of its growth. Radishes grated and mixed with vinegar and oil are much used abroad. Vinegar softens the vegetable fibrin and renders them easy of digestion.

14. **Horse radish** is a stimulant root which acts on the stomach after the manner of ground mustard seeds, by promoting a flow of the gastric juice. It is said to be an anti-scorbutic, anti-rheumatic, stimulant, diaphoretic, etc. It is used with a syrup in cases of hoarseness. It has a principle similar to

15. **Garlic.** This is the most pungent of a tribe of plants named (L.) *allium.* Garlic is frequently found growing wild, and is much used in Continental cookery. Garlic, onions, shallots, chives, etc., are all wholesome, nutritious vegetables, excellent antiscorbutics and tonics, with splendid nutritive qualities. They are rather

difficult to digest; and for people of weak digestive powers they ought to be cooked and eaten with wholemeal bread, when they form an excellent diet. For people of sedentary habits, thus used they will form one of the most valuable medicines as well as foods. They are said to be disinfectants; this is erroneous, as they only show the presence of infectious diseases by absorbing certain gases which change the colour of the roots. Onions are the best absorbers of disease, being more watery in texture than others of its tribe. The essential oil or principle of this tribe of plants is narcotic.

	Artichoke.	Potato.	Beetroot.	Parsnip.	Carrot.	Turnip.	Onion.
Nitrogenous matter,	3·2	8·6	3·2	6·8	4·3	1·4	4·2
Carbonaceous matter,	16·7	13·1	16·0	10·5	5·0	2·0	8·5
Mineral and other matter, . . .	2·9	3·3	2·4	8·5	10·5	·6	·5
Water, ...	77·2	75·0	78·4	74·2	80·2	96·0	86·8
	100·0	100·0	100·0	100·0	100·0	100·0	100·0

CHAPTER VI.

VEGETABLE FOODS: FRUITS, GOURDS, AND FUNGI.

1. Apples are the best known, appreciated, and by far the most wholesome fruit we have. Rich in acids which are needed for the system, abounding in phosphorus, they possess albumen, carbon, and other matters, rendering them most valuable articles of diet. Children, and people who do not get much exercise, ought to eat plenty of ripe apples. The best and most essential qualities are found between the thin outer case and the flesh. Paring an apple deprives it of a great deal of its very finest qualities. The American method of pouring boiling water over the apple and wiping off the outer shell or skin on a cloth is preferable, as then very little of the apple is wasted, and decidedly none of its good qualities.

2. Berries. We have a long list of what we term *berry fruits.* There are strawberries, gooseberries, black, red, and white currants, whortle, cran, and barberries, with elder berries, blackberries, raspberries, etc., all forcing their claims as food principles. Most useful and important substances of food they are, too; without fruits we should have much sickness and illness amongst our people. Then there are other and more expensive fruits—the grape, peach, nectarine, pineapple, apricot, citron, and lemon all taking a very prominent part in national food, and possessing qualities highly conducive to health. The orange, too, is one of the greatest boons the dwellers in large cities

have, and there is hardly a more healthy fruit for consumption or external use in cases of ulcers, etc. than the fig.

The annexed analysis will show the relative value of a few fruits.

	Apple.	Orange.	Strawberry.	Gooseberry.	Ripe Green Fig.
Nitrogenous Matter, .	3·0	2·5	·5	1·3	8·0
Carbonaceous Matter, .	12·0	11·0	1·2	7·5	64·4
Mineral and Other Matter, ...	3·6	1·4	2·0	2·0	4·0
Water, ...	77·4	80·1	91·3	84·0	22·4
Acids, ...	4·0	5·0	5·0	5·2	1·2
	100·0	100·0	100·0	100·0	100·0

3. Our **Gourd** plants are rising every year to more importance as our knowledge of how our neighbours fit the fruit for table becomes more generally known.

The vegetable marrow, cucumber, and melon are the best known, whilst the pumpkin is the most nutritious and useful, and is gradually finding a place amongst our English vegetable foods.

4. **Fungi.** There are twenty-nine edible sorts of mushrooms growing in this country fit for human food. They are unfortunately little known, but form an important and valuable source of food, possessing highly nutritive qualities. The names of the edible sorts are chantarelle, candle clavaria, curled helvella, clouded mushroom, champignon (fairy-ring), edible

tube, edible morel, fir-cone mushroom, fir-wood mushroom, furrowed clavaria, giant puff-ball, horse mushroom, lilac stem, liver fungus, maned mushroom, meadow, orange milk, oyster, plum, pear milk, purple cobweb, red flesh, scaly, St. George's, spine-bearing, truffle, viscid white, variable, and yellow-gilled mushrooms.

In Russia, and generally on the Continent, there are forty-eight species used. Some act as strong narcotics, others as stimulants. In many places fungi form a staple article of the food of the peasantry, just as we use bread.

CHAPTER VII.

VEGETABLE FOODS: CEREALS, BARKS, ETC.

1. Our **Cereal** and seed plants are amongst the most important items in our food supply obtained from the vegetable world. The chief of these are wheat, barley, oats, pease, beans, maize, rye, rice, lentils, and millet. Dried pease and beans are very rich in nitrogenous matter; whilst wheat and barley, when used in the form of whole meal, are possessed of all the essentials of a perfect diet. The following analysis will show their relative values. It is in these seed and grain foods that the substitute for animal food is found; and it is a quite consistent theory that, with all the valuable elements which are tabulated below, a man can exist on them and perform hard, laborious work, preserving robust health, without having recourse to animal food. But at the same time the moderate use of flesh foods is to be commended, where it can be obtained, especially in this climate.

2. **Seeds** and **Nuts.** Amongst these, coffee and cocoa supply us with daily beverages of the most useful kind. The most nourishing of the two as at present prepared for table is cocoa. They are both stimulating in their character; but the solid matter in coffee is an almost waste substance, whilst in cocoa it is utilized, giving nourishing as well as thirst-quenching and stimulating qualities. The carob or locust bean is sometimes used as food; it is very sweet. The olive yields us oil. In Italy bread is made from acorns; and in this country they are roasted to adulterate

	Beans.	Lentils.	Rye.	Pease.	Oats.	Millet.	Wheat.	Barley.	Rice.	Maize.
Nitrogenous Matter, . .	33·0	30·0	26·0	24·5	24·2	21·4	21·0	14·6	15·0	9·5
Carbonaceous Matter, .	48 0	52·5	58·2	58·2	62·3	62·2	60·2	68·4	72·7	78·2
Mineral and Other Matter, ...	5·2	3·6	1·6	3·2	5·1	2·4	10·4	4·2	1·5	4·3
Water, ...	13·8	13·9	14·2	14·1	8·4	14·0	8·4	12·8	10·8	8·0
	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

cheap coffee. Hazel nuts, chestnuts, walnuts, filberts, almonds, cocoanuts, all form articles of food. They contain a little nitrogenous and a fair share of carbonaceous matter, but their distinct analysis is not necessary, as they are rather luxuries than staple articles of food.

3. **Barks** are chiefly used medicinally, cinchona being the principal. In Norway and Sweden the inner barks of the birch are ground and made into bread in times of scarcity.

4. Of **Lichens**, Iceland moss is that best known to us. It is a nutritive food, with tonic and corrective principles. The bitter taste is extracted before it is prepared as a food. In Russia a spirit of a very powerful kind is made from it, whilst the people of Lapland form bread of it. The algæ used as food are dulse, laver, and carrageen (Irish moss). The first named is common in the Scotch markets; laver in the Welsh and Irish markets; whilst carrageen is well known, and in America a patent food prepared from it is very popular. The term Irish moss is a misnomer, as this is a seaweed and not a moss.

CHAPTER VIII.

ANIMAL FOODS AND THEIR NUTRITIVE VALUES.

1. Passing from the vegetable to the animal kingdom, we find that animal foods are more readily digested than vegetable foods. They require less mastication, and are, so to speak, in a manner prepared for human food. We get all the essentials of the vegetable world in a condensed and more easily assimilated form. On referring to chapter ii., it will be seen there are many substances in common in both kingdoms. We have albumen, sugar crystals, oleine, casein, etc., whilst we have salts important to our human economy identical in both kingdoms.

2. **Beef** is the principal and most nutritious, although not the most quickly digested, of our flesh foods. It has its qualities more strongly developed than mutton, horse-flesh, or pork. It shows on analysis a preponderance of nitrogenous matter. We will see on examining a piece of flesh meat that it contains muscular and blood fibrin, albumen, fat, salts, and the red juice. It will be found that some of the most valuable qualities of flesh foods are contained in these liquid portions. In cooking, the great aim is to preserve them, as if lost the meat becomes insipid.

3. **Mutton** is the most digestible of our table meats, and more suitable to children and delicate people, although, as before noticed, it is not so rich in nutritive qualities. The bones (weight for weight) contain more gelatine, and less fat and mineral substances, than those of beef.

4. **Pork** contains less nutriment, and more heat-giving properties, than beef or mutton, but when eaten,

either salted or fresh, with potatoes and other vegetables, it forms a common article of diet. It is difficult of digestion, especially for people of sedentary habits.

5. **Veal** and **Lamb** are more watery and less nourishing in their principles than full-grown meats. Prime beef should be from four to six years old, mutton three to five. The smaller boned the animals, the more delicate the flavour and the finer the grain of the meat. Short-horned cattle and Southdown sheep are considered the finest table animals.

6. **Horse-flesh** is not cultivated as yet in this country for table use, but the day is not far distant when it will rank no doubt with our other meats. The flesh is nutritious, tender, and rather sweet. It is to be had in many Continental towns.

7. **Poultry** possess many of the good qualities of 'flesh meat,' but in a less degree. Albumen, fibrin, gelatine, fat, etc., are all found. They derive their peculiar and distinctive flavour from their various kinds of food. Thus it is quite possible to make a domestic fowl taste like a pheasant by feeding it as a gamekeeper would that bird, mingling the food with wild berries. Sea-fowl are rather fishy in taste; but if the outer skin be removed and the bird soaked in salt and water, they are fit for the most delicate palate, besides their being rich in nutriment.

8. **Game.** Hares and rabbits may be here mentioned. They are very nutritious, and the latter are very plentiful; in the country they take the place of butchers' meat. The hedgehog is a delicacy little known in towns; while the Rev. J. G. Wood assures us that he, together with many of his guests, prefer rat pie to other more expensive delicacies. Thus far his testimony is only a confirmation of what the gipsy has known for years, viz. the value as articles of diet of many kinds of fungi, and the excellent qualities of the

hedgehog and the barn-fed rat as adjuncts to their mid-day or evening meal.

9. **Fish.** The value of fish as a food product increases day by day as science reveals to us the merits of phosphorus as a life-sustaining element, and the vast quantity of this substance found in fish, in conjunction with carbonaceous and nitrogenous substances, especially in the more plentiful and so-termed coarser kinds of fish. Fish is readily digested, it is therefore quickly assimilated, and there is less waste material than in any other form of food obtained from the animal kingdom. Fish builds up sinew, flesh, bone, and is a far more useful and cheap article of diet than many of the town dwellers are aware of. The poor use great quantities of dried and salted fish. This process does not take away from the true value of fish as a food resource; it simply hardens the albumen and preserves it from putrefaction. The effect of salt on butchers' meat is to deteriorate its nutritious value, extracting the juices; in fish, salt solidifies the nourishing and essential liquid portions.

10. **Herrings** are the poor man's great staple food, either fresh or salted, and they are quite rich in nutriment, ranking next to beef as a dietetic. Analysis of the herring and other fish are given below. The salmon is a rich food; it is cheap, when bought in tins, and nutritious also. It contains substances which form the red particles of the blood. Crustaceæ or shell-fish are very popular amongst certain classes of people; the edible mussel, for instance, is a good food, and there are two or three rules which, if duly observed when gathering and preparing for table, would save much sickness and discomfort arising from their present neglect.

(1.) Never use mussels found in docks or on the keels of vessels. They absorb metallic poison, which, although it seems not to affect the shell-fish, is injurious to the human race.

(2.) Never eat mussels found in the mud where a town sewerage is likely to penetrate; rock mussels, and those found in shingle beds, are the most wholesome.

(3.) Examine each mussel for 'the crab,' as the fisher people term it, a small creature, more like a spider, lodging under the tongue of the mussel. It is poisonous.

11. Oysters are plentiful, healthful, and can be had alive or canned. The average daily shipment from New York to this country is 1000 barrels.

12. Eels. Mud eels are rich in nutriment; they mostly come from Rye in Sussex for the London markets. The sand eel ranks next, and they are very delicate eating; they abound on the southern coast, and Jersey is famed for them. The conger eel is the king of the tribe, and, whether salted or fresh, is a valuable, cheap, useful food. It simply requires careful, proper dressing to render it the most attractive dinner dish. Its cheapness is its worst fault.

	Loch Fyne Herring.	Conger Eel.	Cod.	Mackerel.	Tweed Salmon.	Plaice.	Flounder.
Nitrogenous Matter, . .	13·1	13·0	12·3	11·2	11·2	10·9	10·5
Carbonaceous Matter, . .	16·1	14·3	15·3	14·8	16·4	8·4	8·7
Mineral and Other Matter	3·7	4·1	4·2	4·6	5·2	7·4	6·5
Water, . .	67·1	68·6	68·2	69·4	67·2	73·3	74·3
	100·0	100·0	100·0	100·0	100·0	100·0	100·0

N.B.—In a rough analysis a whiting gave the same return as plaice; in another case it nearly approached codfish. The analysis of fish caught on the north coast of Great Britain gave also a greater percentage of oily matter (carbonaceous) than that found on the southern coast and Channel Islands.

CHAPTER IX.

ANIMAL AND MINERAL PRODUCTIONS, WATER, ETC.

1. Young animals are fed upon food digested for them by their mothers, and given in the form of milk, which is the model food, containing all the essential elements for the support of the body. Now, milk is one of the most simple substances to analyze; first put a little acid into some new milk and warm it to boiling point, and you will find the great flesh-former, the curd or *casein.* Take another sample, put it into a little toy churn, and after revolving for some time the fat or heat-giving element will appear in the form of butter. Then, if another small quantity is slightly heated, all the water will turn into steam; and after subjecting to a greater heat, it leaves behind a solid substance, which, when burnt, discovers the ash or mineral substance which supplies the bone, etc. in the body. Thus we have solid and liquid food supplied in 'Nature's model diet.' As we advance in years the food becomes more concentrated and artificial in character; we have cheese, for instance. This food is a great muscle producer. The navvy will make a mid-day meal of bread and cheese. His great muscular exertion exhausts the power of the body, and the cheese builds it up again in a manner which will be explained in the next volume.

2. Eggs play a very important part in many of our home dishes; they are wholesome when properly used and prepared for table. The most digestible form is to be lightly boiled to set the albumen—*i.e.*, three minutes and a half for a freshly laid egg, three minutes

if it be two or more days old. Raw eggs are rapidly digested and absorbed; but the after effect on the system is not so good, as it leaves the stomach empty, and the gastric and other juices work upon its coats, create biliousness, and undo the work the food was intended to perform. It has often been said that hard-boiled eggs are not nutritious, that their best qualities are lost; but from recent analyses made by our most learned scientific men, we find that if an egg is boiled for ten minutes it is perfectly indigestible, and consequently its nutritive qualities are lost on the eater, but if boiled from thirty to forty minutes the egg resumes its good qualities, the yolk turning into a sort of 'mealy flour;' being easily digested and its good qualities readily assimilated, the egg thus treated forms a useful article of diet to the traveller or hunter.

3. Not the least important as a food ranks the greatest blessing we have, that is **Water.** Pure water is absolutely necessary to the preservation of good health. It enters more or less into the composition of all foods, as will be seen on glancing over the various analyses. Water is simply the mixture in certain proportions of two gases called oxygen and hydrogen. There is an easy little experiment which may be tried. Take a small piece of potassium and put it into a tumbler of water. It will collect the oxygen round it, and freeing the hydrogen, the latter burns, thus actually setting fire to the water. Water is an absorber, one of the most powerful we have. If it passes through metals, or soil which contains ore, such as iron, it will quickly absorb the solvent properties and retain them. This is found in mineral waters, which people drink because of their having absorbed certain mineral substances, such as iron, salts, potash, etc. Water, being an absorber, is often rendered poisonous by taking in bad gases thrown off from

decaying animal and vegetable matter, and people ought to keep everything near the sink, pumps, and well, sweet and clean, as if not they may be slowly poisoned, and the water, instead of being a nutriment, would be a cause of death and disease.

The purest water is obtained from Artesian wells. These are made by boring a hole into the earth till chalk is reached, and the water there found is pure, well filtered, and free from impurities.

Water is a dissolvent of food when taken into the system. Without it we could not digest food, and if not digested, it loses its nutritive uses. Meat cooked in soft water is more tender than that treated with hard water. The purest form of soft water we have is rain water. Water is rendered hard by earthy salts absorbed during its passage through the ground. Those who dwell in towns ought to filter the water for domestic use, and keep it in a covered earthen pan, never in zinc buckets or metal cisterns. The following is a cheap, useful filter, and recommended by the late Dr. Parkes, professor of hygiene at Netley :—

'Get a large-sized common earthenware flower-pot. Place a piece of clean-washed flannel, two thicknesses, over the hole. Take some fine gravel, wash it, and place three inches deep in the pot; white sand, also washed, three inches. Now take 1½ lbs. animal charcoal powdered, place in a basin, pour boiling water over it, and let it rest from ten to fifteen minutes; gently pour off the water, and cover again with boiling water, stirring the charcoal and water well together. When the substance has settled, drain the water off once more, and spread evenly over the sand in the pot. Fill the pot with water, and let the water percolate through. *N.B.*—The flannel ought to be changed, and the gravel, etc. washed, once a fortnight, or once a week if the water is very impure. The charcoal also requires renewing from time to time, or it will turn to small worms.

An article treating on the subject of water says: 'It may be pleasant to those who live in a region of our country where nothing but hard water is to be had, to be informed, by so good an authority as Dr. Tidy, the well-known chemist, of the results of his observations on the use of hard water for culinary and domestic purposes. (1.) Hard water is the best dietetically, because of the lime. (2.) It makes better tea, although not so dark-coloured, owing to the fact that soft water dissolves the bitter extractive matters which colour the tea, but ruin the aroma. (3.) It does not dissolve lead or organic matter, which soft water does. (4.) It is generally good-coloured, soft water being, as a rule, dark-coloured and unpleasant-looking; hence, in places like Manchester, supplied with soft water, they always put it—in hotels—in dark bottles, to hide the colour. A soft water, however, is a better detergent, and requires less soap. For a residential town a water which has over ten degrees of hardness would be best. For manufacturing towns a soft water would be the most advisable, for commercial considerations only.'

APPENDIX.

The following table may be useful in showing the proportions and chemical construction of a few of the various foods and substances found in food:—

Albumen (as found in an egg), $C_{72}H_{111}NaN_{18}SC_{22}$, H_2C.

Acids found in foods—

Acetic, $HC_2H_8O_2$; Butyric, $C_4H_8O_2$; Carbonic, CO_2; Citric, $C_6H_9O_7$, H_2O; Cream of Tartar, $C_4H_5KO_6$; Hydrochloric, HCl; Lactic, $C_3H_6O_3$; Malic, $C_4H_6O_5$; Oxalic, $C_2H_2O_4$, $2H_26$; Oleic, $C_{18}H_{34}O_2$; Phosphoric, H_2PHO_3; Palmatic, $C_{16}H_{32}O_2$; Sulphuric, H_2SO_4; Stearic, $C_{18}H_{36}O_2$; Prussic, HCN.

Alcohol, C_2H_6O; Brimstone, S; Carbon, C; Caramel, $C_{12}H_{18}O_9$; Cellulose, $C_{18}H_{30}O_{15}$; Cafeine, $C_8H_{10}N_4$; Dextrose, $C_6H_{12}O_6$, H_2O; Dextrin, $C_{12}H_{20}O_{10}$; Glucose, $C_6H_{12}O_6$, H_2O; Glycerine, C_3H_5, H_3O_3; Hydrogen, H; Tuosin, $C_6H_{12}O_6$, $2H_2O$; Kreatin, $C_4H_7N_3O$; Lactose, $C_{12}H_{24}O_{12}$; Lævulose, $C_6H_{12}O_6$; Margarine, $C_{54}H_{104}O_6$; Nitrogen, N; Oxygen, O; Oleine, $C_{57}H_{104}O_6$; Palmatin, $C_{57}H_{98}O_6$; Phosphorus, P; Sodium, Na; Stearine, $C_{57}H_{110}O_6$; Sulphur, S; Sucrose, $C_{12}H_{22}O_{11}$; Starch, $C_{12}H_{20}O_{10}$; Tannin, $C_{27}H_{22}O_{17}$; Theine, $C_8H_{10}N_4O_2$; Theobromine, $C_7H_8N_4O_2$.

N.B.—C = carbon, H = hydrogen, N = nitrogen, O = oxygen.

END OF BOOK I.

Stewart's Extra Subject Series.

FOOD:

ITS

FUNCTIONS AND USES.

BOOK II.

BY

BARBARA WALLACE GOTHARD,
MEMBER OF THE LECTURERS' ASSOCIATION;
EDITRESS OF 'THE FOREIGN SETTLER AND EMIGRANT;'
AUTHORESS OF 'LESSONS ON COOKERY,' 'FOOD: ITS COMPOSITION AND NUTRITIVE VALUE,' 'FOOD AND ITS CULINARY PREPARATION,'
'OUR FOOD MANUFACTURES,' ETC. ETC.

LONDON:
W. STEWART & CO., THE HOLBORN VIADUCT STEPS, E.C.
EDINBURGH AND GLASGOW: J. MENZIES & CO.

STEWART'S EXTRA SUBJECTS.

Written expressly for the New Code.

SUBJECTS.	1st year. 48 pages.	2d year. 48 pages.	3d year. 96 pages.	The three years in one.	
MATHEMATICS, . .	3d.	3d.	6d.	1s.	Hundreds of Teachers have now testified that these cheap little Manuals are better suited to the requirements of the present Code than any books extant.
LATIN, ...	3d.	3d.	6d.	1s.	
FRENCH, . . .	3d.	3d.	6d.	1s.	
MECHANICS, . . .	3d.	3d.	6d.	1s.	
ANIMAL PHYSIOLOGY, .	3d.	3d.	6d.	1s.	
PHYSICAL GEOGRAPHY,	3d.	3d.	6d.	1s.	
BOTANY, . . .	3d.	3d.	6d.	1s.	
DOMESTIC ECONOMY, .	3d.	3d.	6d.	1s.	

LONDON: W. STEWART & CO., HOLBORN VIADUCT STEPS, E.C.

CONTENTS.

CHAP. PAGE

I. Food : its Relation to Physiology, . . . 5

II. Value of Wholesome Foods, ... 12

III. Popular Food Dietaries and their Effects, . . 15

IV. Carbonaceous and Nitrogenous Foods, and their Action on the Human Body, ... 20

V. Food Stuffs and their Functions, ... 24

VI. The Functions of Water and other Liquid Foods, . 29

VII. Condiments and Seasonings, with their Uses, . 35

VIII. The Uses of Acids, ... 39

IX. Our Mineral Foods, ... 43

Appendix, ... 45

Stewart's Extra Subjects.

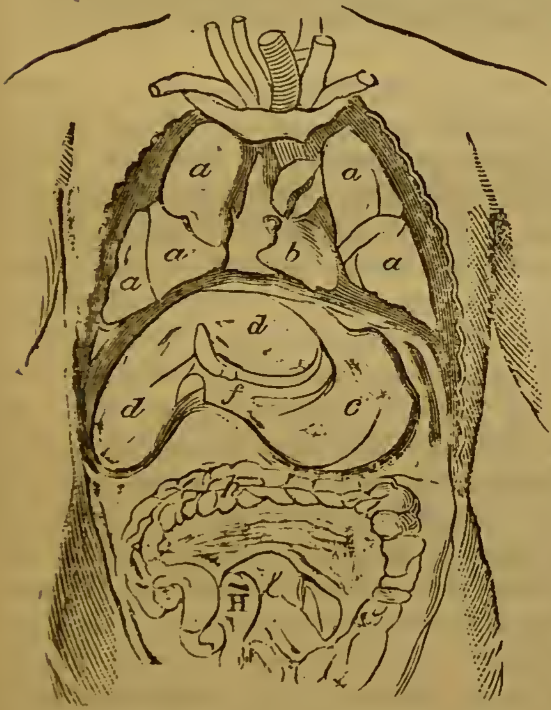
FOOD: ITS FUNCTIONS AND USES.

SECOND BRANCH.

CHAPTER I.

FOOD: ITS RELATION TO PHYSIOLOGY.

1. Thoroughly to understand the functions and uses of food, we must learn something of the mechanism of the human body as far as it relates to the digestion and absorption of food.



a, lungs; *b*, heart; *d*, liver; *c* and *f*, the stomach; H *h*, large and small intestines.

2. The human body contains five distinct chambers where food undergoes the process of digestion. The first is called the cardia = *conjuncture or hinge*, from Latin *cardo;* this is the mouth of

the stomach. The second is the pharynx, a funnel-shaped bag, which receives masticated food and conveys it through the œsophagus to the third chamber, the stomach proper. The fourth is composed of small tubes rolled together, generally termed the small intestines. Fifth and lastly, the large intestines, which are also tubes, but of larger dimensions.

3. The whole work of digestion, however, is not carried on by these different sections of the stomach alone. They are assisted by other agents, such as the teeth, tongue, glands, etc.; whilst certain organs attached to the small intestines, called the liver, pancreas, lacteal vessels, and glands, all play important parts in the preparation of food for the nourishment of the body.

4. When food is taken into the mouth, it is placed by the tongue in position for the action of the teeth, then, by the force of the muscles of the jaw, it is ground down into tiny particles,—the tongue assisting by pressing softer portions against the palate, and acting as a duct to the many glands which pour their fluid secretions into the mouth. The fluid which comes from the glands is termed mucus. It is highly important that it should be thoroughly mixed with the food during the process of grinding, known to us as the mastication of food. The fluid is whitish grey, transparent, semi-glutinous, salt to the taste, and of an alkaline nature. Vegetable foods require a greater admixture of this mucus (saliva, or mouth fluid), to render them digestible, than animal substances. When food is swallowed without due mastication, it lies in the stomach unacted upon by the gastric juice, causing irritation and disorders of a health-ruining character.

5. When the food is thoroughly mixed with the saliva, warmed by the natural heat of the mouth to

the temperature of blood, it is gathered by the action of the tongue; and the soft palate rising, it is transmitted to the pharynx, or second receiving chamber, through the cardia. It arrives at length in the stomach proper, a bag-like structure of an irregular shape, semi-oval in fact, and not unlike the body of a bagpipe. This is placed in a transverse position. When the food reaches the stomach, two layers of muscles alternately contract, giving a swaying motion to the food, which is thereupon mixed with a clear fluid substance called the gastric juice, held in secretion by the inner coat of the stomach. This inner lining, or coat of the stomach, is called the mucous membrane. The gastric juice contains acids, pepsin, and salts; these act as solvents to the food, turning it into chyme. It takes, as a rule, about five hours to convert an ordinary meal into chyme. This substance passes into the fourth chamber, viz. the small intestines, where it is acted upon by juices from the pancreas and liver ducts. These are called pancreatic juice and bile. The food then becomes chyle; and its appearance varies according to the kind of substance which has been eaten. If oleaginous foods,—*i.e.* fat or oils,—then the chyle assumes the appearance of cream, and many of its properties; whereas, if there is an absence of fatty food, the chyle is semi-transparent. When the food is changed into chyle, it is separated from the non-nutritious or waste substances of the food. These are expelled, whilst the nourishment is absorbed by myriads of little root-like vessels called lacteals, which spread themselves out, absorbing the chyle and carrying it through the lungs in the form of blood. It then becomes purified, and takes the nourishment, through the blood, to the various portions of the body which require repairing or building up. Some food goes to renew muscle and tissue; some to feed the brain; other vessels take supplies of nutriment to the bones, teeth, hair, nails, etc.

6. As questions bearing upon Dr. Beaumont's table of the time occupied in the digestion of foods are frequently given, it is as well the pupil should become acquainted with it, and the history of its preparation. In 1822, a Canadian soldier, named Alexis St. Martin, was placed under Dr. Beaumont's care, whilst suffering from a gunshot wound which had ripped the flesh, laying bare the cavity of the stomach. It was two years before the Canadian fully recovered from his wound, and although he lived for many years afterwards, the opening in the stomach never quite closed up. Dr. Beaumont, during the two years, made a series of experiments on the digestion of various foods, viewing the changes through the aperture made by the gunshot wound; and to his perseverance we are indebted for much valuable information on human physiology. Of course, in various constitutions the time of digestion varies. A man of sedentary habits would not digest food as rapidly as one who has much muscular action.

TIME TABLE OF FOOD DIGESTION.

Name of Food.	Mode of Cooking.	Time in Digesting.	
		H.	M.
Apples, sour, hard,	Raw,	2	50
Apples, sour, mellow,	,,	2	0
Apples, sweet, mellow,	,,	1	30
Barley,	Boiled,	2	0
Beef, fresh, lean, raw,	Roasted,	3	0
Beef, fresh, dry,	,,	3	30
Beef, fresh, steak,	Broiled,	3	0
Beef with salt only,	Boiled,	2	45
Beef with mustard,	,,	3	30
Beef, fresh, lean,	Fried,	4	0

Time Table of Food Digestion—*continued.*

Name of Food.	Mode of Cooking.	Time in Digesting.	
		H.	M.
Beef, old, hard, salted,	Boiled,	4	15
Beet,	,,	3	45
Brains,	,,	1	45
Bread, wheaten, fresh,	Baked,	3	30
Bread, corn,	,,	3	15
Butter,	Melted,	3	30
Beans, pod,	Boiled,	2	30
Cabbage head,	Raw,	2	30
Cabbage with vinegar,	,,	2	0
Cabbage with vinegar,	Boiled,	4	30
Cod fish, dry, cured,	,,	2	0
Cartilage,	,,	4	15
Carrots, orange,	,,	3	15
Cake, corn,	Baked,	3	0
Cake, sponge,	,,	2	30
Chicken, full grown,	Fricassee,	2	45
Cat fish, fresh,	Fried,	3	30
Cheese, old strong,	Raw,	3	30
Custard,	Baked,	2	45
Ducks, domestic,	Roasted,	4	0
Ducks, wild,	,,	4	30
Dumpling, apple,	Boiled,	3	0
Eggs, fresh,	Hard boiled,	3	30
Eggs, fresh,	Soft,	3	0
Eggs, fresh,	Fried,	3	30
Eggs, fresh,	Roasted,	2	15
Eggs, fresh,	Raw,	2	15
Eggs, whipped,	,,	1	30
Flounder, fresh,	Fried,	3	30
Fowls, domestic,	Boiled,	4	0
Fowls, domestic,	Roasted,	4	0
Gelatine,	Boiled,	2	30
Goose,	Roasted,	2	30
Green corn and beans,	Boiled,	3	45
Heart, animal,	Fried,	4	0

Time Table of Food Digestion—*continued.*

Name of Food.	Mode of Cooking.	Time in Digesting.	
		H.	M.
Hashed meat and vegetables,	Warmed,	2	30
Lamb, fresh,	Boiled,	2	30
Liver, beef, fresh,	,,	2	0
Milk,	,,	2	0
Milk,	Raw,	2	15
Mutton, fresh,	Roasted,	3	15
Mutton, fresh,	Boiled,	3	0
Mutton, fresh,	Broiled,	3	0
Oysters, fresh,	Raw,	2	55
Oysters, fresh,	Roasted,	3	15
Oysters, fresh,	Stewed,	3	30
Oyster soup,	Boiled,	3	30
Pig's feet, soused,	,,	1	0
Pig, sucking,	Roasted,	2	30
Parsnips,	Boiled,	2	30
Pork steak,	Broiled,	3	15
Pork, fat and lean,	Roasted,	5	15
Pork, recently salted,	Boiled,	4	30
Pork, recently salted,	Fried,	4	15
Pork, recently salted,	Broiled,	3	15
Pork, recently salted,	Raw,	3	0
Pork, recently salted,	Stewed,	3	0
Potatoes, Irish,	Boiled,	3	30
Potatoes, Irish,	Roasted,	2	30
Potatoes, Irish,	Baked,	2	30
Rice,	Boiled,	1	45
Sago,	,,	1	0
Spinal marrow,	,,	2	40
Salmon, salted,	,,	4	0
Suet, fresh, beef,	,,	5	3
Suet, fresh, mutton,	,,	4	30
Soup, beef, vegetables, and bread,	,,	4	0
Soup, marrow bones,	,,	4	15
Soup, beans,	,,	3	0
Soup, barley,	,,	1	30

Time Table of Food Digestion—*continued.*

Name of Food.	Mode of Cooking.	Time in Digesting. H.	M.
Soup, mutton, ...	Boiled,	3	30
Soup, chicken, ...	,,	3	0
Sausage, fresh, ...	Broiled,	3	20
Tendon, ...	Boiled,	5	30
Turnips, flat, ...	,,	3	45
Trout, salmon, ...	,,	1	30
Trout, salmon, ...	Fried,	1	30
Turkey, domestic, . . .	Roasted,	2	30
Turkey, domestic, . . .	Boiled,	2	25
Turkey, wild, ...	Roasted,	2	18
Tapioca, ...	Boiled,	2	0
Veal, fresh, ...	Broiled,	4	0
Veal, fresh, ...	Fried,	4	30
Venison steak, ...	Broiled,	1	35

From this estimate of foods, we can fairly judge their relative digestive values and the effect the various methods of cooking has upon them. Also hot foods are much more rapidly assimilated than cold, and cooked food more easily digested than raw material, except in the case of eggs, oysters, and foods containing large quantities of albuminoid substance.

CHAPTER II.

VALUE OF WHOLESOME FOODS.

1. 'We eat to live—not live to eat,' ought to be our daily maxim if we would maintain good health and an unimpaired digestion. How few there are who fully understand the value of the few simple words at the opening of the chapter, especially in this age of tempting, highly cooked, concentrated, and over-spiced relishes! Wholesome food is the great secret of long life. Fresh air, pure water, plain edibles simply prepared, partaken of in moderation, will materially assist in keeping the great masterpiece of mechanism, the human body, in good health. Rich concentrated foods are more difficult of digestion than the plainer kinds. It is perfectly true that in one mouthful of condensed substance you may obtain nourishment equal to that ordinarily obtained in four of unconcentrated food or food in its natural state, but the misfortune is, that in this age people eat bulk as well as quality, and in consequence there is an over-supply of richness accumulated in the blood, which cannot be utilized in the human economy for the building up of bone, muscle, flesh, etc., and which eventually poisons the blood, deranges the system, and induces disease, such as extreme fat, inducing tendency to heart disease, plethora, apoplexy, and the like.

2. Take, for example, the food partaken of by two men, a city clerk, and a denizen of the New Forest. The former has his dinner at a city restaurant, partakes of soup, plenty of meat, rich pudding, or in lieu cream-cheese or stilton, quaffing a cool tankard of Burton

ale as a finish; whilst the man living in the New Forest has a dinner of home-baked bread, skim-milk cheese, and either milk or water as a beverage, and on high days and holidays potatoes, vegetables, bacon (fresh meat they rarely see), with hard (sour) cider as a drink. We will find the countryman, although poorly fed, to be the most perfect in health, and eventually the longest liver.

3. It is not the richness nor the quantity of food one takes into the system that renders food wholesome. More people suffer from dyspepsia, the result of over-eating and rich food, than from any other malady except consumption, and that disease is aggravated in most cases by improper food. All foods are good when taken in moderation, whether they be vegetable or meats.

4. The vegetable kingdom is described by a well-known writer on health as 'a vast laboratory in unceasing operation for the creation and elaboration of substances of primary necessity to the existence of animals.' In the animal kingdom we find these substances in a manner concentrated and prepared for more direct assimilation in the system. It takes a greater bulk of vegetable than animal food to support the system. A diet wholly of vegetables may be adhered to without any serious want of animal food being felt, but a diet entirely of flesh food produces skin and other diseases. All systems cannot assimilate animal food, others cannot exist without it. The effects of vegetarian diet on some constitutions is seen in the Swiss peasants, particularly the females, who suffer from goitre, a throat disease brought on by the want of animal food and stimulants.

5. The vegetable foods perform very important functions, they have subtle and valuable uses in the human economy. Take a sailor, feed him on salt pork, junk, and hard biscuit, and keep from him the other products of the vegetable kingdom for a short time,

and you will find that he is attacked by a disease called scurvy, that he suffers intensely from the privation; but supply him with fresh vegetables and lime juice, and there is no vitiation of the blood,—the man is healthy.

6. The use of vegetable food and fruits should enter largely into our summer dietary. Vegetables and fruits thin the blood of excess of carbonaceous material which has accumulated during the winter months, and so prepares the system to endure the summer heats. Again, vegetable food acts as an antidote to the over-eating of animal food. The system of dieting, or rendering the stomach accustomed to one particular kind of food, is wrong in principle and productive of bad results. I have known factory hands, girls who were earning 15s. to 18s. per week, diet themselves to obtain dress, living on coffee and wheaten bread, with thin slices of salt tinned meats as a relish for dinner. It was certainly cheap food *pro tem.*, but in three cases the doctor's bill outweighed the saving. The insufficiency of change of diet, and the want of vegetable food, brought on sickness and inability to earn their daily bread; the stomach became contracted, sluggish for want of proper substances on which to act, whilst after a time it refused to digest even the meagre supply of badly assorted viands which were given it to supply the waste of the body. The constant use of salted tin meat produces scrofula unless quantities of fresh vegetables or salads are used in conjunction with it.

7. Animal food is presented to us more in the likeness of the component parts of our own bodies; thus we have ready prepared tissue, blood fibrin, fat, etc., all more quickly dissolved and drawn into the system without either requiring the bulk of food or the variety of chemical changes vegetables undergo to bring them to the proper state for human absorption.

CHAPTER III.

POPULAR FOOD DIETARIES AND THEIR EFFECTS.

1. It is of little use prescribing quantities and set foods for all the people who wish to live long and be healthy. Constitutions differ as widely as tempers, and what would be a wholesome food for the Dorsetshire labourer would hardly suit the constitution of a scholar or a statesman, men subject to as great mental strains as the labourer is to muscular. The great desirability is to suit the food to the functions it has to perform. The labourer requires the waste of the muscles of the body repaired, and he therefore eats food of such a nature as will be useful and subservient to his wants. Skimmed-milk cheese, beans and bacon, cabbage, dried pease, barley meal, all these tend to give him what he requires, but would hardly be suited to a man of hard study, whose greatest waste is brain power, and whose blood is constantly drawn away from the stomach and other portions of the body to supply with fresh nutriment the over-great concentrated strain on the brain. To such a man brain-feeding foods, light and easy of digestion, are requisite, such as fish, mutton, milk, rice, potatoes, oatmeal, apples, mixing thus the foods so as to give the greater bulk to the brain feeders. A well-known writer, speaking of mental labour in relation to food, says: 'The notion that those who work only with their brain need less food than those who labour with their hands is fallacious; mental labour causes greater waste of tissue than muscular. According to careful estimates, three

hours of hard study wear out the body more than a whole day of hard physical exertion. "Without phosphorus, no thought," is a German saying; and the consumption of that essential ingredient of the brain increases in proportion to the amount of labour which the organ is required to perform. The importance of the brain as a working organ is shown by the amount of blood it receives, which is proportionately greater than that of any other part of the body. One-fifth of the blood goes to the brain, though its average weight is only one-fortieth of the weight of the body. This fact alone would be sufficient to prove that brain-workers need more food and better food than mechanics and farm-labourers.'

2. Again, there are more cases of disease and death from over-eating than from intemperance in drinking. We do not heed the former because they are of such everyday occurrence, and bring on the subject no moral disgrace and shame, such as fall upon the habitual drunkard, but the sin is the same; it is a waste of good food that might prolong the life or save from moral degradation worse than death many an outcast of society. If money spent in gormandizing and in persistent attempts to ruin the system were only devoted to giving the poor of our land a few good plain meals, it would be a double boon.

3. The human digestive organs are just supplied with the quantity of gastric and other juices sufficient to dissolve a proper quantity of food for the support of the body, which amounts to a few ounces at a time. If more be eaten, it lies in the stomach undigested, causing sickness, sleeplessness, feverishness, and a dozen other uncomfortable symptoms.

4. Climate has a great deal to do with the kind of food we require. For instance, the wandering Arab finds coarse bread, water, and a few dates sufficient

for his daily wants, varied now and again by juicy, watery, thirst-quenching fruits. The Spanish peasant lives on dry bread and a raw onion in summer; in winter on oily compounds and savoury stews, in which garlic or onion predominate, and little meat is seen or eaten. The Frenchman varies his food wonderfully. In summer, the peasant eats salads, leathery cheese, frogs, and omelettes; whilst in winter and spring few dishes can compare with the delicious *pot-au-feu*. The Scotchman eats oatmeal, peaflour, barley broth, potatoes, mutton, and beef; whilst the Lapp delights in whale blubber and oil, eating quantities of sugar foods whenever attainable, a dietary of carbonaceous foods supplying warmth against intense cold.

5. The following tables have been given by Lyon Playfair, one of our greatest authorities on this question, and whose persistent researches have done so much for science. There is only one point where experience teaches us to differ in Table I., and that is the amount of food required in quietude and in moderate exercise. The former is really greater to satisfy nature than during a period of work, as digestion

TABLE I.

Daily Diet Required.	Nitrogenous Substances.		Carbonaceous Substances.
To maintain life only, . .	2·0 oz.	+	13·3 oz.
In quietude, ...	2·5 ,,	+	14·5 ,,
In moderate exercise, . .	4·2 ,,	+	23·2 ,,
In active labour, ...	5·5 ,,	+	26·3 ,,
In hard work, ...	6·5 ,,	+	26·3 ,,

takes place more rapidly, and the gastric juice works upon the coats of the stomach, causing a feeling of hunger and faintness; whereas, if the body or mind be actively employed, the food is longer in digesting, and the stomach cannot receive or utilize more food than it can digest. It is not always the hardest working man who is the largest eater. Lazy people eat larger quantities and accumulate fat from over-feeding more rapidly than the brain-worker or the labourer. They also feel hunger sensations sooner after meals.

TABLE II.

DIETARIES OF WELL-FED OPERATIVES.

Class of Labourer.	Flesh former.	Fats.	Starch & Sugar.	Containing		Containing	
				Carbonaceous.	Nitrogenous.	Carbon.	Nitrogen.
	Oz.	Oz.	Oz.	Oz.	Oz.	Grs.	Grs.
Blacksmith, .	6·20	2·50	23·50	29·50	6·20	6864	437
English navvy (Crimea), . .	5·73	3·27	13·21	21·06	5·73	5014	404
English navvy (railway), . .	6·84	3·82	27·81	37·08	6·84	8295	482
English sailor, .	5·00	2·57	14·39	20·40	5·00	4834	252
French sailor, .	5·74	1·32	23·60	26·70	5·74	6379	405
Royal engineers (work), . . .	5·08	2·91	22·22	29·38	5·08	6494	358
Soldiers (in peace), . . .	4·22	1·85	18·69	22·06	4·22	5246	297
Soldiers (in war), ...	5·41	2·41	17·92	23·48	5·41	5561	381
Tailors (in full work), . . .	4·61	1·37	18·47	21·64	4·61	5136	325
Weavers ,,	5·33	1·53	21·89	25·42	5·33	6020	375

6. It will be seen that it is essential to have in our food certain average proportions of nitrogen and carbon. If we examine the mean proportions of these substances in our food products, we shall arrive at a good general idea of the functions each food will develop, and its use in the list of our food stuffs. The general proportions given out by our physiologists as requisite for our health are four of carbon to one of nitrogen.

CHAPTER IV.

CARBONACEOUS AND NITROGENOUS FOODS, AND THEIR ACTION ON THE HUMAN BODY.

1. We have considered how food is digested and turned into blood, and the waste of muscle, bone, sinew, etc. thus repaired. All this is done by the nitrogenous and mineral foods. But there is another class of foods, viz. carbonaceous, which are very important. They are heat or force producers, such as butter, suet, olive oil, sugar, starch, etc. The use of carbonaceous food is to give warmth to the body. If we breathe on a pane of glass on a cold day, we see the breath condense like steam; it turns from vapour into little bead-like drops of water. Now if our breath were not heated in some way, this would not happen. If we take a long journey on a cold day and do not eat, we feel tired, chilly, and the heat power diminishes; but after eating, the warmth comes back to the body, and we feel the power to work. This heat is given by the fuel substances in food—the carbon. Look at the chemical list, Book I., and you will see the quantity of carbon or heat-giver each food substance contains, and you can then tell which foods will give the most warmth.

2. You have been told that the human body is a great machine. It is not only continually digesting, changing, and assorting foods, but it is constantly creating and keeping up heat. In a properly fed man there is as much heat generated or made in the body as would boil 75 pints of water in a day. The food is

constantly burning away, and if we had no food to keep up this internal heat we should die, the body becoming colder and colder till the fire went out, and with it the life. People who eat a great deal of fat do not feel the cold so much as those who feed chiefly on lean meats, fruits, and vegetables. The dwellers in Lapland require more fat or carbonaceous foods than the Arabs or the Mexicans. The former delight in whale blubber. If the other nations I mention were to live on it, they would suffer most intensely from over-heating and vitiation of the blood. The fat of the human body is composed of carbon and hydrogen; there is very little oxygen, and no nitrogen. Whenever there is an excess of carbonaceous food eaten, nature has so provided that the fat shall be stored away for future use; and should nourishment fail, or sickness and disease prevent the intestines from digesting food, this surplus fat supplies the body with nutritive matter.

3. We find that animals that are dormant during the cold months of the year, accumulate fat in the fall of the year. This feeds them during their winter's sleep, and when the bright spring sunshine comes again, to bring the tender herbs, flowers, and fruits, the creatures awaken, and go forth to feed. The internal store of fatty food is exhausted, but there is a supply of external foods ready for their use. In the human body in cases of small-pox, typhoid fevers, etc., where little or no food is taken for days together and yet the patient lives, he is existing on the fat or nourishment stored by nature in case of such a contingency arising. It depends on the body having been previously judiciously nourished whether the patient survives the drain on the system or not. Again, fat is a non-conductor of heat. In persons who are fat we find a layer of fat spreading over the flesh beneath the skin. This prevents the escape of the internal heat of the body, so that it

acts as a shield against outer cold as well as a fuel. Fat has another use; it is so placed in the body that it acts as a protector to various delicate portions of the human organism, to prevent undue pressure, and to preserve from bruises, etc. Thus we learn a double lesson from this wise provision of nature, viz. thrift in providing stores for use in time of sickness, and economy of space and order of arrangement; for the fat is not stored away where it would be unsightly or ugly, but placed where it will be of use, and yet not mar the beauty of the figure.

4. The uses and action of nitrogenous foods are more readily traced through the blood. After the food is taken up by the lacteals (Chap. I., sec. 5) it is conveyed to an oval sac, where it is mixed with lymph, which is blood without the red particles. This mixture is conveyed by the thoracic duct to the heart, where, on its way, it meets blood which has been circulating through the body, called venous blood, with which, drop by drop, it mingles, forming the nutritive fluid proper of the human frame. This nutritive fluid is, we see, composed of three distinct parts:—(1.) The chyle, a substance of a white, cream-like consistence, composed and prepared from foods that have been masticated and mixed with salivary juices; undergoing chemical changes, it is next transformed into chyme by the dissolvent powers of the gastric juices, and again into chyle containing albumen after being acted on by the biliary glands, by which means the substance eaten approximates the component parts of the body in a liquid form. (2.) We have the chyle mingling with substances which are found in the system, and have done duty in the human organism, viz. the lymph, whence it acquires fibrin and (3.) venous blood. All this is poured into the heart, pumped up into the lungs, where the watery particles are separated from

the chyle and lymph, the albumen and fibrin becoming thus more condensed. The lymph here loses the colourless feature which distinguishes it, and, together with the other fluid substances, assumes the size and colour of the blood corpuscles, and is termed arterial blood. The blood now traverses through a regular network of arteries over the entire body. The blood every now and then changes from a brilliant scarlet to a darker crimson. This is when the parts of the body through which the blood is flowing select and abstract the various particles of nutriment necessary to their repair or formation. The substance thus extracted is identical with the portion of the body which extracts it, and is immediately allied to it as part and parcel of itself. Thus if it be the brain which requires feeding, it selects a tiny globule containing phosphorus, which, on being taken out of the blood by little arteries, is at once mixed with that substance in the brain. In another case it will be muscle; in another teeth, hair, nails, bone, nerves, tissue, tears, fat, and so on. All are fed through the medium of the blood, and deposited in kind by the little agents, the tiny arteries, whose work it is to absorb it and lay it in its proper place.

CHAPTER V.

FOOD STUFFS AND THEIR FUNCTIONS.

1. The commonest food stuff we have is **Bread** made from wheat. It is the staple food of our English people. Bread is a nitrogenous food as well as carbonaceous. It is flesh-forming, heat-giving, and, when whole meal is used, brain-feeding, besides giving the constituents for teeth, hair, and bone; but although wheaten bread is carbonaceous on account of the sugar, starch, and gum it contains, it is wanting in sufficient oleaginous principles, and it lacks certain vegetable salts very necessary to health. Brown bread is more wholesome than white, as the best qualities of the grain as an article of nutriment are lost when the flour has undergone the processes of bolting and sifting. Wheats are red and white. The former are hard, and richer in the more nutritious qualities than the white. Red wheats are grown principally in the south of England; white wheats render a more delicately white flour, pleasing to the eye, but not so nourishing. The Yorkshire bread is principally made from the flour of white wheats, but it is not so satisfying as the bread found in Wilts and Dorset from the red wheats. Macaroni is made from a hard red wheat, and is an excellent nitrogenous food.

2. **Oatmeal** is very rich in flesh-forming substance, much more so than wheat, but it will not bear the process of fermentation like wheaten flour; it is heavy, and the glutinous matter too much developed, but it is excellent food. It is rich in flesh-formers;

heat-givers preponderate, whilst mineral matter is well proportioned. Porridge and oatmeal cakes are very brain-feeding, but they require correctives in the shape of acids to counteract the heating principle. Thus the Scotch and Irish, who use oatmeal largely, take them in the form of butter milk or sour milk, the lactic acid acting as a dissolvent and counteracting the excess of carbon. Persons fed largely on oatmeal have always good teeth and luxuriant hair. Finely-ground oatmeal, such as that prepared by Johnston of Ironmonger Lane, is useful as a dietary for young children. In its plastic and respiratory qualities it very closely resembles human milk, and contains iron and phosphates.

3. **Maize** is superior to all other cereals in fatty matter, and is considered by an eminent analytical chemist of the present day as superior to our other grain foods. It is certain that it is preferred before wheaten flour by our American cousins; that it is delicate in taste and nutritious in quality; that whether used as Indian meal for cakes or mush, hominy as a substitute for potatoes, sweet green corn as a table delicacy, pop corn as a food adjunct, or in the shape of corn-flour and semolina, it now plays a very important part in our own list of dietaries. It is a flesh-forming and heat-giving food, but not so rich in mineral substance as oatmeal.

4. **Rice** is another food stuff which we use extensively. It is not so rich as either of the preceding in heat-givers or flesh-formers. A too great use of rice produces skin disease, induced from its non-nourishing qualities. It engenders in this country poverty of the blood when used as a staple article of diet. Rice requires to be eaten with fruits, meats, or in conjunction with milk or other nitrogenous food. Rice is most useful for assimilation when baked in water or milk. The Mexicans steep the rice in a little water in an earthen

pot near or over the fire, and when it has absorbed the water it is fried in oil in the shape of little cakes. This adds a heat-giver, and enhances the value as a food stuff.

5. **Rye** and **Barley** are used for making bread in some countries. In Northumberland and the border counties of England and Scotland, rye and barley breads are manufactured to this day. The people term it black bread. In Germany rye bread is greatly used. It will keep good for months; but in wet seasons the rye is subject to a blight or disease called ergot, which proves poisonous if mixed with the flour. Rye and barley are nutritious, the latter far more so than rice. We use a great deal of barley in soups, and for drinks in cases of sickness. Well cooked, it is easy of assimilation, and is a nourishing food stuff.

6. **Pease** and **Beans** (dried) rank as amongst our best vegetable flesh-formers. Either whole or ground, they form important items for our consideration as dietaries. The French use the haricot bean and the lentil as daily food, the Scotch the dried green pea in their famous Scotch broth. In the north of England fried pease are eaten, whilst split pease for soup, and pea-flour for puddings, are well known to the British sailor and soldier, and the pease brose of Scotland has only to be tasted to be appreciated. All these articles might be used with great advantage by the English of the middle classes, especially when other food stuffs, in the shape of wheat and potatoes, are likely to run short, and meat to be very dear. Pease and beans build up flesh and muscle. A substance is found in them analogous to the curd of cheese. This is casein.

7. **Potatoes** make us brain, bone, and flesh. They have plenty of heat-givers in the shape of starch, although rather wanting in flesh-formers when compared with pease and beans.

8. If we compare these vegetable foods with meat, say lean beef, we will readily perceive how it is that there is more bulk of vegetable food stuffs required to sustain life than animal food. In the same bulk of beef, as a type of animal food, there is nearly five times as much flesh-forming substance as in wheaten bread; but it is destitute of starch, although heat-givers are there in concentrated form, such as fat, and a small quantity of a species of sugar. Thus meat food, being a prepared form of vegetable food, can be eaten in smaller quantities, and then it is more quickly dissolved in the stomach, and the work of producing albumen and fibrin from vegetable into animalized substance is already done. Over-fed meat, *i.e.* fat meat, is not good for the nourishment of the body. There is too much fatty substance, and too little of the lean or tissue and flesh-forming matter. Animals that have been moderately and judiciously fed, and have been permitted to have out-door exercise, are sweeter to the taste, and their flesh is more calculated to perform the work of building up and renewing, than a stall-fed beast. Meat being highly-concentrated food, we do not require large quantities. It is a well-known and world-wide fact that English people eat too much meat, and mostly of the heavy, solid kind, such as huge roasts of beef, boiled legs of mutton, great hams. These solid lumps of meat figure at breakfast, dinner, and supper, with a perpetual force which only shows that John Bull cares nothing for the refinements of cooking, and his love for animal food is extreme. The poor are obliged in a manner to relinquish heavy meat diets, and they are none the worse for being forced to have more vegetable and fish, with less of beef, mutton, and pork. Some of the most healthy, stalwart men we have ever seen,—men who were engaged in heavy foundry work, powerful of limb and not wanting in

fine brain power,—were vegetarians and water drinkers; so that meat is not an absolute necessity for good health. On the other hand, persons having less violent action, employed in sedentary work, would be more apt to feel the loss or rather the want of animal food. People of delicate digestion and of weak habit of body would more readily benefit from a small quantity of this concentrated food than the men mentioned in the former case. Victor Hugo made some very valuable and humane experiments amongst the poor children of his neighbourhood in giving them meat dinners twice a week, and so rescuing many little creatures from the effects of bad and insufficient diet. Meat is a great restorative and stimulant. Beef-tea does not nourish, but it restores the tone of the stomach, and is quickly absorbed, because it is already animalized. Fluid foods are more rapidly taken into the system than solids. Meat broths and soups are good, therefore, in moderation; they combine extracted animal matter with vegetable substance. A too great use of soups, on the other hand, weakens the digestive powers. A constant series of stews, hashes, boiled meat, and soups will soon tell its own tale, and the doctor be called in to rectify the mischief of too much sameness of diet. Meat is most digestible and useful in its solid form, roasted, grilled, or broiled. Even if it does get a little burnt on the outer side, a portion of animal charcoal now and then does the digestion no harm; but a good cook would seldom if ever commit the fault of permitting food to burn.

CHAPTER VI.

THE FUNCTIONS OF WATER AND OTHER LIQUID FOODS.

1. Those of us who have wells of good pure water can hardly comprehend the loss we should suffer if we were either deprived of water or obliged to drink it in an impure state. Pure water is an invaluable blessing, and is really the only drink we have. It is the most rapidly absorbed of all substances. Supposing we are thirsty and drink, no sooner does the water enter the stomach than it is at once absorbed. All other liquids, *i.e.* mixtures of water with other substances, as tea, spirits, lemon juice, etc., require to undergo a chemical change before the absorption takes place. The gastric juice has to act on them to set the water pure and simple free, when it is at once taken into the system, and the other elements are left in the stomach and go through the same process of digestion as solid foods. When any fluid is taken up by the lacteals before the extraction of the food substances from it, then the stomach has to let the liver perform its work, causing irritation, pain, and discomfort to the patient.

2. Liquids, whether water pure and simple or mixed with other substances, should never be taken during the process of mastication. It is a common habit with children, and people whose teeth are defective, to moisten their food with some liquid whilst in the act of eating. Apart from the habit being anything but well-bred, it is positively injurious to health. The solid foods, and more particularly vegetable foods, require thorough mixing with the saliva, and unless they are so mixed they are not digested. The moistening of

food with water hinders this intimate incorporation of the glandular juices of the mouth, and prevents the chemical changes which take place in the food, whilst undergoing the process of chewing, from being elaborated, notably the conversion of the starch substances into dextrine. Liquids must be taken when the mouth is empty, and are best at the beginning or close of a meal. Their tendency, if taken in excess, is to weaken the digestive powers. Alcoholic drinks retard the digestion of food. Brandy and like spirits taken in excess burn the lungs and destroy the coats of the stomach, thus thrusting its duties upon the liver, which becomes diseased from perversion of its uses, resulting in what is known as hobnailed liver, etc. Milk is a very nourishing liquid, and is particularly adapted for children, since it feeds as well as quenches the thirst; but all grown-up people cannot digest large quantities of milk unless mixed with aerated water. Oatmeal water, as prepared by the orders of humane masters, and as used by the workmen in our large foundries, ship-yards, metal-works, and

CONSTITUENTS OF VARIOUS MILKS.

	Human.	Goat.	Ass.	Cow.
Nitrogenous Matter, . .	5·2	6·4	5·6	6·1
Carbonaceous Matter, . .	4·6	3·2	4·2	7·4
Mineral and Other Matter,	1·2	1·4	1·3	·3
Water, ...	89·0	89·0	88·9	86·2
	100·0	100·0	100·0	100·0

engine-rooms, closely approaches milk in nutritive value, whilst it is an admirable drink. The table on preceding page shows the composition of human milk as compared with cows', asses', and goats' milk. Condensed milk is made by evaporating milk in a water bath, and when it is of the consistency of treacle adding powdered loaf sugar to it.

On looking over the analysis, we find the nitrogenous qualities of goats' milk rank the highest, and next in importance is cows' milk. This principle is the curd which contains the casein; then we have asses' milk; and human milk comes last as a nitrogenous diet. In carbonaceous food cows' milk takes the lead. Although human milk is richer in saccharine matter, yet cows' milk abounds in oleaginous substances; it is deficient in sugars, and it also lacks phosphate of lime, or the bone-making material found in human milk. Cows' milk has not the volatile principles found in warm asses', goats', and human milk. It is a stimulant principle which gives to these milks their peculiar taste. It will also be seen that whilst human milk is peculiarly adapted to the nourishment of infant life, the milk obtained from domestic animals is most admirably suited as a beverage and food adjunct to men and women in robust health. To render cows' milk a perfect liquid diet for infants, then, it requires the addition of sugar, water, and lime.

3. Fermented liquors are in use all over the world. The wandering tribes of Central Asia make a fermented liquor from milk called 'sparkling koumiss;' the Lapp distils the Iceland moss and produces a powerful spirit; the Russian peasant distils 'raki' from rye and barley; and the Mexican Indian produces spirit from the rejuvenating leaves of the coca tree. The African savage makes beer and spirits from the juice of the plantain and palm tree; and the South Americans,

in addition, use bananas as spirit producers. Englishmen make beer and porter from malt and hops; cider from apples; perry from pears; wines from all fruits, as currants, grapes, raisins, gooseberries, also from tubers, as carrots and parsnips; spirits from wheat, barley, grapes, and beetroot. There is much dispute as to the functions and uses of these fermented liquors, but they are generally believed to be stimulating in their action. The too great use, or rather the abuse, of them has been a great curse to people in all ages. In Turkey intoxicating drinks or rather fermented liquors are strictly forbidden by the laws of the Mahometan religion. Their common beverage is a drink made from the juice of the grape, which is prepared by boiling the grapes with sugar—just as we make preserves—until it is firm and so solid that it can be cut with a knife. It is put into goatskins and stored for winter use. They call it 'pek mez.' The Turk eats this after the manner of our jam, and in lieu of butter, or if he is thirsty he mixes it with water. In this latter form the taste is described as being like new cider. The acid in the fruit is most useful, as it acts directly on the blood, thinning and purifying it. In our own country, beverages are frequently made from black currant jam mixed with boiling water. The acid properties of the fruit, as well as its medicinal qualities, render it useful in cases of sickness. The juices of fruits expressed and mixed with syrups are used as summer beverages; whilst the fruits of the orange, vine, melon, red and white currants, etc., may be termed liquid foods. Men have lived without drinking even water for months together. It is quite possible to do so, but the want of actual beverage must be supplied by plenty of ripe watery fruits, such as oranges, grapes, etc. A writer in a popular journal says:—'I have myself drank no liquid, not even water, for many months, and my health never was better. I have no craving for liquid of any kind. I mention this to show that the practice of drinking at meals, or between them, is a purely artificial practice, not based on the real wants of the body. I think, therefore, this subject of vegetarianism an eminently important one for all temperance men to consider. There cannot be a doubt that the drunkard's appetite is kept "keen" by the use of highly stimulating foods; and if dipsomania is to be successfully treated, everything of a heating or thirst-creating character ought to be laid aside. As fruit and boiled vegetables contain 80 to 90 per cent. of pure water, that quantity may well suffice, but if much salt is eaten, more may be needed to wash it from the blood. Whenever the blood is thick or acrid, thirst calls for water to dilute it.' Hot, sweet drinks retard digestion, and the use of too hot tea or coffee will bring on decay of the teeth more quickly than any other agency. This arises from these hot fluids causing indigestion and acidity of the stomach. Tea and coffee are powerful stimulants; in strong, hot doses they act on the system like spirits. Tea is an antidote to spirits, and *vice versa*. Both are bad for the moral and physical condition of the body when indulged in to excess. A celebrated physician says:—'The habitual use of *hot* fluids is a slow but certain cause of nervous weakness. They act by debilitating the nervous fibres, hence the muscular power of the stomach is impaired and rendered unable to digest nourishing food. Those persons who really prefer tea and coffee to other articles, must render them lukewarm by the addition of good cream, and on no account take them without sugar. The best teas are the least injurious to the nerves, and are, moreover, the cheapest. One would really think that common sense would teach people not to take any fluid of greater heat than that of the body; and I cannot comprehend for what purpose a custom should be followed which is so highly injurious to the muscular system, unless it is that the sipping of hot tea, by causing a longer continuance at table, necessarily creates a more protracted gossip. It is an historical fact that complaints of the stomach and consumption were not nearly so prevalent prior to the custom of taking these hot beverages; and at this time it will be found that those who do not take their food above lukewarm are the most free from indigestion.' At present the doctors are having a crusade against 'tea dyspepsia,' as, since teetotalism has become a matter of choice or necessity with many people, they systematically destroy their digestion and nervous system by overdoses of tea. Tea and coffee, like many other foods, affect people in various ways. To some they are deleterious, to others sources of healthy nutriment. Bilious people are sure to suffer if they indulge in coffee with milk. Coffee simply sweetened is not in the least likely to excite the biliary glands; tea has no effect directly on the bile. Thus we see either may be taken in excess, too hot, too strong, or mixed with some other nutriment which will destroy its digestive properties, as coffee with milk.

CHAPTER VII.

CONDIMENTS AND SEASONINGS, WITH THEIR USES.

1. Highly spiced foods are, if constantly indulged in to excess, like many other things, injurious to the human kind. The most common seasoning we have is salt, and it is really an essential to our well-being. **Common salt** comes under the head of a mineral food,[1] and is called by chemists **Chloride of sodium.** Its functions are: (1) preservative—*i.e.*, it keeps substances from decaying, whether animal or vegetable; (2) it also assists the digestion of albuminoid foods; (3) it facilitates the absorption of water into the system; (4) it furnishes hydrochloric acid for the gastric juice, and (5) chlorine for blood and muscle. The want of proper quantities of salt in food produces intestinal worms. The depriving of prisoners of salt was a punishment inflicted on their criminals by the Dutch in the olden days. As late as fifteen years ago, English children suffered intensely from insufficiency of salt at a leading Parisian school. An excess of salt taken in food produces scrofula and skin diseases. Thus people who live on salt pork, salt fish, and tinned salt meats, without eating sufficient vegetable food, will be found to be attacked with this disease, and have difficulty in eradicating it. Potash is the antidote; this is found largely in cabbage and other vegetables. Salads ought to be eaten with salt meats, as in lettuce, endive, watercress and the like, we find abundance of potash to counteract the over-drying principles of the salt used in curing or preserving the meat. The purest

---

[1] See Chapter IX. page 42.

salt in the world is obtained in the Saltrange Mountains in the Punjab, British India.

2. **Mustard** is a very useful condiment. It is a vegetable product. The seeds of the plant are ground, and the outer husks being removed, the meal or flour is mixed with white farina, such as potato starch, for of itself pure mustard is too pungent to be used separately. Mustard is generally eaten with fat or rich meats, such as pork, beef, goose, etc. Its functions are to act on the coats of the stomach, causing the glands to open and pour forth a larger supply of fluid to digest the food. It is, in fact, an artificial mode of promoting the digestion of over-rich concentrated foods. As a medicine it is very useful. It is a valuable emetic when mixed with water in the proportion of a tablespoonful to a tumblerful of lukewarm water. Taken internally, *i.e.*, eaten on bread and butter or with food, it is said by medical authorities to deaden the pains felt by consumptive patients, and to promote the torpid digestion whilst it prevents sloughing from the coats of the stomach, and thus preserves the mucous membrane.

3. **Pepper** is a stimulating seasoning. There are four kinds—black, white, long, and cayenne. Nos. 1 and 2 are obtained from the same plant, which is a pretty creeper, found growing in the East and West Indies and the Spice Islands. It is really a native of Malabar, but is cultivated in the places noted. Black pepper is the fruit, which is gathered at an early stage of ripening, and is dried by the sun until the berries become black and hard. White pepper is allowed to grow until quite ripe, and is then steeped in water till the outer husk or pericarp is quite soft and easily rubbed off. When peeled they are then sun-dried. White pepper is considered more delicate and less pungent than black. Black pepper is chiefly used in

the process of cooking, the white for table use. Their functions are stimulating; they excite the more rapid action of the blood, they are pleasing to the palate, and prevent flatulency.

The dwellers in the tropics use a great deal. They are chiefly vegetarians. The heat of the climate does not warrant or require the frequent use of meat foods; but the watery nature of many of their fruits and vegetables requires the astringent qualities of spices, and this nature has bountifully supplied them with in the shape of hot berries, barks, and roots, pepper being amongst the most common. No. 3, long pepper, is the unripe fruit of another kind of pepper plant. It is not so strong an astringent as the two former, nor is the volatile oil as strongly developed. No. 4 is the pod of the capsicum dried and powdered. It is an acrid stimulant; small doses assist digestion. It is a blood stimulator, and contains a powerful spirituous element.

4. Another condiment of a milder stimulating nature is the **pimento**, Jamacia pepper or allspice, as it is termed. It takes its last name from the fact that it tastes like a mixture of the principal sweet spices, as cinnamon, cloves, etc., and has also a slight flavour of black pepper. Its functions are tonic, to restore the stomach as well as to stimulate the digestive powers.

5. A sweet, semi-sedative, mildly tonic spice is the **nutmeg**. It is not a digestive agent, but is used as a gentle, soothing stimulant, and as a relish to meats and fruits. It abounds in essential oil, as also does mace, which is an outer covering or lace-work of fibre found covering the inner case of the nutmeg after its outer husk is removed.

Cinnamon and **cassia** are the dried inner barks of a species of laurel growing in Ceylon and China. These barks are peeled off in long strips, sun dried, and then packed in bundles. It is an antiseptic stimulant, and a very useful spice.

The **clove** is a strong, powerful astringent, containing an essential oil of a hot, burning nature. It is a digestive and stimulating agent; taken in large quantities the oil is poisonous, but the cloves themselves may always be safely used; whilst two or three drops of the oil mixed with half a pint of spirit of wine will make a pleasant flavouring medium for sweets and confectionery when used in moderation.

Ginger is a useful spice, and one that is much in favour as a food flavourer, a stimulant, and an astringent. It excites the blood to more rapid circulation, and whilst it slightly retards the digestion of food it renders it more perfect, preventing fermentation.

Thus we see that all condiments and seasonings are given to increase the digestive powers, stimulate the blood, or excite the salivary and other glands. They are good in moderation, and particularly useful in hot climates. Many of them are valuable antidotes to vegetable acids and vegetable fermentation.

We have also valuable barks used medicinally to give tone to the digestive organs and counteract overheating of the blood,—the cinchona rubra, for instance, which is now playing such an important part in the medical world as a cure for fever and intemperance; it is an antidote to spirit and beer drinking.

CHAPTER VIII.

THE USES OF ACIDS.

1. The most common acid used in and with our daily food is **vinegar.** It has important properties, functions, and uses. It is an antiseptic—*i.e.*, it prevents decay and putrefaction. In animal and vegetable substances, a leg of mutton or piece of beefsteak brushed over or dipped in vinegar will keep sweet, free from decay and the attacks of flies, for a fortnight in hot summer weather. Fish treated in the same manner will keep fresh longer than when left with only a little salt sprinkled over. Vegetables and fruits are prepared with salt, spices, and vinegar, so as to preserve them and add vegetable relishes to our food at a period of the year when such vegetable products thus pickled are scarce or not otherwise obtainable.

2. Vinegar softens both animal and vegetable fibrin. Take 1 lb. of beefsteak, halve it, steep one portion in vinegar for half an hour or longer, rinse in warm water, and then, after wiping dry, cook the two portions equally, and it will be found that the meat which has been treated with the vinegar is much more tender than that which is prepared without the steeping. If we examine a piece of vegetable marrow, a walnut, an apple, or piece of lemon which has been pickled and in vinegar for a month or so, we will see its effect on the vegetables, and find it to be identical with the action on meat. If vinegar is applied hot to vegetable substances, the softening process is much more rapid. Thus we see plainly why vinegar is used with meats and vegetables. What takes place when we steep the meat and pickle the fruits is similar to its action on food in the stomach. It softens the fibres and assists the digestion.

3. But whilst the nature of vinegar is to soften fibrin, its action on albumen is just diametrically opposite. It hardens albumen. Take, for example, the purest type we have, ovalbumen or white of egg. Select two eggs,—pudding eggs will be best,—and let them be dressed as in the process known to cooks as ‘poaching eggs,’ one without vinegar in the water, and the other with the acid. The effect will at once be apparent by the rapid coagulation of the albumen on its contact with the acid principle. The composition of vinegar will be found in Book I.

4. Then we have the various fruit acids, which act as correctives to over-heating foods, tending to purify the blood from vicious matter, thinning it when it is thick and sluggish, and producing healthy skin action; for when the blood is filled with impure matter, brought on by either poor food or too luxurious living, it is sure to try and eject it, either through the porous covering of the flesh, *i.e.* the skin, or by depositing the germs of disease on the lungs or other portions of the body. Fresh fruits with their acids correct all this. Hence we have the ‘Grape Cure,’ so well known to the scrofulous and consumptive patients of France and Germany, which is simply a means of forcing the sick to live on brown bread and grapes, the healthful acid found in the fruit, by its action on the food and on the blood, working the cure by thinning and purifying the blood. Strawberries, too, contain, like the apple, malic acid, and its functions are much the same as vinegar, only to a certain degree milder. It assists the digestion of the fibrin of the fruit, whilst it acts on the salts in the body, and by its contact produces chemical changes which promote healthful circulation and purity of the sanguinary fluid. The antiseptic qualities of acids is strongly marked in tannin, which retards waste and decay most powerfully. We have

this substance in tea. The lumberers of Michigan drink large quantities of tea, one and two lbs. per week for each man. They can do so without suffering from nervous tea dyspepsia, as house-dwellers and people living in cities would assuredly do were they to drink it in such profusion. The reason of their being able to take so much lies in the fact that in felling the timber they are losing great muscular power, and the tea, or rather the tannic acid, assists to repair the loss of muscle, whilst the stimulus of the theine is as powerful as if they drank beer or spirits, which is not attainable in the backwoods.

5. On the other hand, the too great use of acids or acid foods is extremely injurious. The effect is to impair the digestive organs. Vinegar, for instance, may be taken in large quantities for a time, and there is no perceptible derangement of the stomach, the food is rapidly and well digested; but after a time the effect will be visible. The vinegar, by dissolving the food too rapidly, leaves the gastric juice to work upon the stomach instead of the food, and it corrodes or wears the mucous membrane away, leaving it utterly powerless to digest food, which then ferments, and is literally a waste substance as far as its nutritive qualities extend. If taken in time, a little magnesia or chalk may act as a corrective, but serious life-long injury is often done by young people indulging too freely in the use of vinegar, lemon juice, and powerful acids. A tooth steeped in lemon juice for twenty-four hours will be found to have the enamel destroyed. Its action on the stomach when used in large quantities, undiluted or unmixed with food, is the same. It eats into or wears away the coating of the intestines, disarranging the whole of the mechanism of the body; whilst if taken in moderation, acids are conducive to healthfulness.

CHAPTER IX.

OUR MINERAL FOODS.

1. Our most popular mineral food is salt.[1] In Book I. a short description of salt will be found. It has most important functions. It is antiseptic, and in this character is used as a means of preserving nearly all kinds of foods, vegetable and animal. In the last chapter we saw that, in conjunction with spices and vinegar, it was used for making vegetable and fruit pickles, so we have it also used for keeping meats and fish from decaying—in the form of corned beef, salt junk, pickled pork, mutton hams, dried salt fish, pickled pilchards, and eggs preserved in brine. All these articles are prepared by the action of salt.

2. Salt is a dissolvent, it assists digestion. It has a particularly dissolvent power on albumen. A very common experiment amongst young students is to dissolve the ovalbumen in salt, acid, and cold water, gradually raising the temperature to 95° or 100°, when it will be found that the egg begins to melt away and incorporate itself with the water. This dissolving of the albumen is due to the action of the salt and acid.

3. Salt supplies the blood with a very valuable element called chlorine. We have spoken of the gastric juice and its valuable offices in the digestion of food. This juice has in its composition an important acid called hydrochloric acid, and this substance is supplied by means of the salt which we consume.

4. Salt helps the system to absorb water. If we do not take salt with our food, the blood deteriorates, is incapable of nourishing the body, and disease is the result. Too much salt is injurious (Chapter II. No.

---

[1] See Chapter VII. page 35.

5). Mr. Baden Pritchard, of the Royal Arsenal, Woolwich, is constructing an apparatus for extracting salt from meats and soups during the process of cooking, so that our sailors and soldiers may not suffer from the effects of too much salt in the system when they are obliged to live on salted meats and the soups prepared from them during long voyages or weary campaigns. One form of the salt extractor can be had for a few pence from any London firm who deals in kitchen patents.

5. Another important substance which is of the utmost value is **phosphorus.** It is in the brain, the liver, the blood, and the lungs. We have already described the foods which contain it in Book I., and the analytical table will help to show by its formula where the substance abounds. Combined with the phosphorus we have soda, lime, potash, and when thus mixed they are termed phosphates. Now these phosphates are really necessary to our health. We get them in a variety of ways from animal and vegetable sources. The phosphate of lime we find in wheat, oats, and such like grain. It is on account of this valuable substance that people are advised to eat brown bread or whole meal. For if the flour be sifted to make it white, as explained in Chapter V. No. 1, it loses one of the most necessary of its compounds. In using pearl barley also, 18 per cent. of its best qualities are lost, viz. the mineral matter found in Scotch barley.

6. Then we have **salts of potash**; it is a corrective to saline particles in the blood. Potatoes, when baked in their skins, contain large quantities of this valuable element as well as phosphorus; and cabbage soup is highly impregnated with it. The value of potash as a food stuff is not over-rated.

7. We have **iron,** which helps to make the red corpuscles of the blood. Plants grown in red clay soil

are found to have iron in their composition. Water passing through the ore absorbs it. People who do not get enough iron through the medium of their food, take tincture of iron and steel to invigorate the blood. Its action, therefore, is tonic. In large quantities it is bad. There are many other minor mineral substances, such as magnesia, manganese, iodine, which are all mineral foods, playing their useful part in the economy of human life; all more or less active agents in keeping the body in health, and fitting it for its duties and the necessary work of everyday life.

The following table has been issued by a well-known analyst as the average quantity of mineral matter he found in certain foods, taking a percentage. Thus in

1000 oz. of	Cabbage	were	17	oz. Mineral matter.
,,	Potato	,,	25	,,
,,	Watercress	,,	18	,,
,,	Oatmeal	,,	26	,,
,,	Pease	,,	25	,,
,,	Turnips	,,	12	,,
,,	Barley meal	,,	24	,,
,,	Maize	,,	26	,,
,,	Wheaten flour (whole)	,,	28	,,
,,	Carrots	,,	14	,,
,,	Parsnips	,,	18	,,
,,	Beef	,,	24	,,
,,	Mutton	,,	20	,,
,,	Veal	,,	15	,,
,,	Cheese, skim milk	,,	35	,,
,,	Do. Cheddar	,,	20	,,
,,	New milk	,,	23	,,
,,	Fresh duck's egg	,,	22	,,
,,	Do. hen's do.	,,	20	,,
,,	Plover's do.	,,	14	,,

We wish it to be distinctly understood by all students, that the results of chemical analysis of food stuffs vary very much. This is observed both in animal and vegetable subjects, and accounts for the slight differences continually discovered in the tables issued by various people who thus report the results of their researches. Seldom do two samples yield the same exact figures, especially if examined at different seasons of the year, and the product of various counties or countries. Grapes and apples are striking examples of this; imported fruits yield somewhat different results to the fresh cut or gathered produce of our own land; again, in the feeding of cattle, the character of the soil, the ores through or by which water for drinking purposes is conveyed to them, whether they are well or poorly fed, and on what substance,—all have to be duly considered, and develop mineral and other matter in their bodies as it has been conveyed in the food. The same remarks apply to plants, all conducing to vary the results attained by the chemist whilst he tries to solve the sublime wonders and beautiful mysteries revealed to him by his studies in the wide and interesting fields of analytical chemistry.

APPENDIX TO BOOK II.

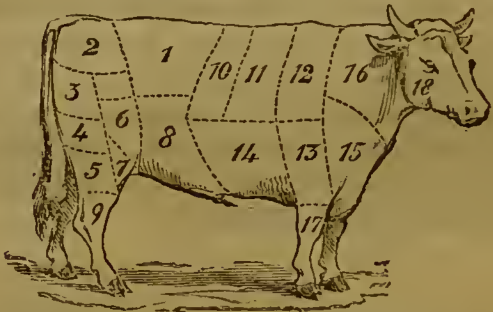
A KNOWLEDGE of the various joints, and the parts of the animal to which they belong, is very essential before learning how to cook them. Subjoined are diagrams of the cow, sheep, calf, and pig, numbered and accompanied by explanatory tables.

OX, HEIFER, OR COW.—When killed, termed *beef.*

1. *The sirloin* is the prime joint, and is always roasted.

2. *Round* is divided into two parts. The silver side being considered most economical, it is either stuffed and roasted, or boiled. Very frequently it is salted, corned, or spiced before boiling. Steaks from this part are considered prime.

3. *Edge* or *Aitch-bone*—generally boiled.
4. *Buttock*—roast or stewed.
5. *Mouse buttock*—baked, roast, or stewed.
6. *Veiny piece*—stew or boiling piece.
7. *Thick flank* }
8. *Thin flank* } —boiled fresh, or salted and pressed.
9. *Hind leg*—the prime part for boiling and stock-making, and potted or collard meats.
10. *Fore ribs*—roasting; there are five ribs so called.
11. *Middle ribs*—generally boned, rolled, and either roast, baked, or stewed. There are four of these.



12. *Chuck*—three ribs, mostly boiled or stewed.
13. *Shoulder piece*—boiling or stewing.
14. *Brisket*—generally pickled and plain boiled or boned, rolled, and pressed.
15. *Lap* or *clod*—boiling or stewing.
16. *Sticking part*—the most valuable portion for beef teas, good gravy soups, containing more red juices than any other part of the beast.
17. *Shin*—inferior to the hind leg. Used for soups and potted meats.
18. *Cheek.*—Potted meats, stews, choice soups, etc.

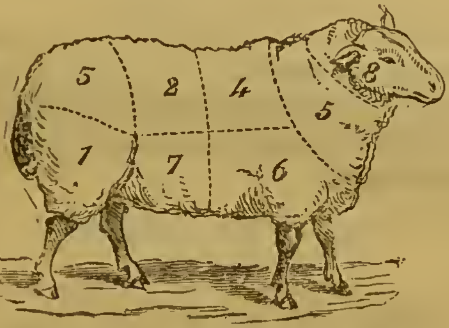
SHEEP OR LAMB.—When killed, *mutton* and *lamb*.

1. *Leg*—one of the prime parts, is either roast, baked, braised, or boiled.

2. *Loin*—prime part; roast, stewed, baked, braised, etc. Two loins undivided form a saddle of mutton, and this is generally roast.

3. *Chump loin.*—Chops from this part are considered best.

4. *Neck*—best end. Cutlet chops are taken from this joint; it is also roast whole, and sometimes stewed, baked, etc.



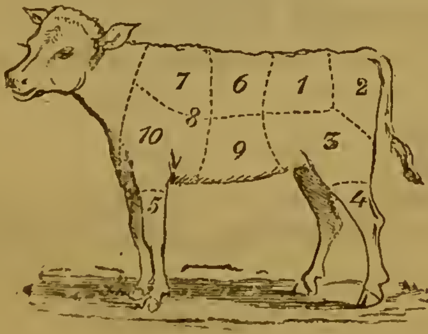
5. *Neck*—scrag end, best boiled or stewed.

6. *Shoulder*—roast, baked; and when boned, stewed or boiled, etc.

7. *Breast*—best boned and rolled, and either baked or roast; too fat for stewing and boiling.

8. *Head*—boiled, baked, or stewed.

CALF.—When killed, *veal.*



STEWART'S EXTRA SUBJECTS.

Written expressly for the New Code.

SUBJECTS.	1st year. 48 pages.	2d year. 48 pages.	3d year. 96 pages.	The three years in one.	
MATHEMATICS, . .	3d.	3d.	6d.	1s.	Hundreds of Teachers have now testified that these cheap little Manuals are better suited to the requirements of the present Code than any books extant.
LATIN, ...	3d.	3d.	6d.	1s.	
FRENCH, . . .	3d.	3d.	6d.	1s.	
MECHANICS, . . .	3d.	3d.	6d.	1s.	
ANIMAL PHYSIOLOGY, .	3d.	3d.	6d.	1s.	
PHYSICAL GEOGRAPHY,	3d.	3d.	6d.	1s.	
BOTANY, . . .	3d.	3d.	6d.	1s.	
DOMESTIC ECONOMY, .	3d.	3d.	6d.	1s.	

LONDON: W. STEWART & CO., HOLBORN VIADUCT STEPS, E.C.

CONTENTS.

PAGE
I. Introductory Remarks, ... 5
II. Foods for January, with Two Menus, . . 9
III. Foods for February, with Two Menus, . . 19
IV. Foods for March, with Two Menus, . . 27
V. Foods for April, with Two Menus, . . 34
VI. Foods for May, with Two Menus, . . 40
VII. Foods for June, with One Menu, and Lesson on Preserving, ... 51
VIII. Foods for July, One Menu, and Lessons in Pickling, ... 61
IX. Foods for August, One Menu, and Lesson on Cakes, ... 66
X. Foods for September, One Menu, and Lesson on Sauces, ... 72
XI. Foods for October, One Menu, Wine-Making, etc., 78
XII. Foods for November, with Two Menus, . . 82
XIII. Foods for December, with Two Menus, . . 87

Stewart's Extra Subjects.

FOOD, AND ITS CULINARY PREPARATION.

THIRD BRANCH.

CHAPTER I.

INTRODUCTORY REMARKS.

1. Cooking is the partial digestion of food by artificial means. Man, in his very distinctive qualities which separate him from the level of the brute creation, may be termed a 'cooking animal,' *i.e.* he does not, as a rule, eat food in its natural state, but by means of heat and other accessories he begins the work of the stomach by softening, concentrating, or extracting its most nutritious qualities, so that the labour of nature is thus assisted.

2. There are various methods of applying heat to food so as to prepare it for eating. These may be divided into two distinct classes, the dry and wet processes.

(*a.*) The most simple and original plan of cooking is by the direct action of fire on the food. Thus, for instance, we have **grilling**, **broiling**, **roasting**, all operations in which the fire throws its heat rays directly on the food.

(*b.*) The next process is **baking**, where the heat is transmitted through some medium, such as stones, as in the rude British ovens, or iron plates, as in our later-day refinements. The food is put into a chamber with iron walls; this is closed so that no vapour or heat can escape, and the food is cooked partly by dry heat and partly by steam generated from the substance placed in the oven. Thus baking is a link between the dry and the wet processes in cooking.

(*c.*) **Steaming** is a method of preparing food by which heat is transmitted through vapour. Water is made to reach boiling point; the food to be cooked is so placed and covered in that the vapour or steam surrounds it. Food thus prepared is lighter, and loses fewer of its nutritive qualities than when immersed in water, that liquid being a great absorber.

(*d.*) **Boiling** gives us heat applied by the medium of water and the direct action of the liquid on the food, and not in a condensed form as in case (*c*). **Stewing** is also a direct action of liquid on food. The difference in the term arises from the method in which the process is carried out. In boiling, a greater degree of heat is used; and the force of heat being stronger, the water is more rapidly moved than in the case of stewing, where hardly any movement is perceptible on the surface of the liquid during the application of the heat.

(*e.*) **Braising** is an operation in which stewing and baking are combined, and very frequently roasting. It is effected by means of a flat disc of iron three or four inches thick and half a foot in diameter, attached to a long rod or handle, called a salamander.

(*f.*) **Frying** is the action of heat on food through the medium of oils or fats. It is literally boiling in large quantities of fatty substance in a liquid state. The English everyday method of frying is an operation called by the French to *sauté*, *i.e.* heating in a small quantity of fat over the fire in a frying or *sauté* pan, and warming the food in that way, tossing it to and fro occasionally.

3. Having thus reviewed the various modes of preparing cooked food that are in general use, we may remark that the utensils required for these cooking processes are—For grilling or broiling (*a*), grids, gridirons, and branders, which are bars of silver, iron, or iron wire, either grooved or plain, and terminating in a cup or bowl at the handle. These are placed above or in front of the fire. In the latter case the dripping-tin is under the bars. For roasting (*a*), either the primitive 'jack,' which consists of a hook, nail, or moveable bracket with notches over the mantelshelf, to which is attached a long string of worsted with a hook at the end, on which the meat is hung, and set revolving. A tin or plate underneath receives the fat or dripping, which every ten minutes is poured over the joint by means of an iron spoon. Then we have the more expensive 'bottle jack,' which is wound up by clockwork machinery, and the worsted replaced by a brass or steel chain. Next come Dutch and American ovens, where the meat is not revolved but laid on a tray, which is shielded from draughts by a tin cover, being open towards the fire; here the joint has to be turned from time to time. The latest invention is the automatic oven, which is revolved by the current of cold air being drawn towards the hot fireplace, and causing the lower phlanges of the oven to revolve, on the theory of *insuction* just mentioned. Roasters are attached to many kitchen-ranges; they differ from baking-ovens very slightly. An oven is a chamber, whether of fire-clay, iron, or other material, without a passage of air through it. The steam and heat are imprisoned within its walls during the time of cooking; but a close-range roaster has a ventilator at the

bottom leading through the top of the oven into the flue, thus leaving a passage for a constant current of cold air, which carries away nearly all the steam or vapour, and gives the food the crispness which is always found on the surface of roasted meat. Steaming (*c*) is carried on in vessels generally placed above a saucepan of boiling water, and the vapour forces its way through little holes in the bottom of the vessel, and is kept in by means of an ordinary lid. A more primitive method is to place the food in a basin and immerse it in water (reaching about one inch from the rim of the basin) in an ordinary saucepan, covering the top of the basin with a clean piece of paper previously greased. All boiled puddings are best treated in this manner. For boiling and stewing (*d*), copper saucepans, pots, stewpans, etc., are used. For braising (*e*), there are proper braising pans; but the Belgian and French peasantry, who excel in this operation, mostly use covered earthenware pans or ordinary stewpans where the braising is carried out in the most perfect way. For frying (*f*), deep stewpans or ordinary frying-pans are used. All cooking utensils must be kept very clean. If they are cleaned at once after using they are less trouble, and more likely to be thoroughly done.

Frying-pans should never be washed. They are best cleaned with paper; and if ever wetted, they must be seasoned by melting dripping in the pan, and rubbing it in whilst the iron is hot, using clean paper as a medium.

CHAPTER II.

FOODS FOR JANUARY, WITH TWO MENUS.

Vegetables.—Potatoes, artichokes, turnips, cabbage, kale, curly greens, beetroot, parsnips, carrots, celery, spinach, sorrel, etc.

Fruits.—Apples, pears, oranges, chestnuts, walnuts, etc.

Meats, Poultry, etc.—Beef, mutton, pork, house lamb, veal, doe venison, capons, wild ducks, geese, turkeys, rabbits, pheasants, hares, hedgehogs, etc.

Fish.—Haddocks, tench, whitings, herrings, cod, conger eel, dace, flounders, plaice, sturgeon, turbot, oysters, mussels, crabs, lobsters, prawns, etc.

LESSON I.

1. **Potato Soup.**—*Ingredients*—2 lbs. potatoes, ¼ lb. onions, parsley, thyme, sugar, pepper, salt, dripping 1 oz.; water, 3 pints. *Utensils*—Basin of clean water, knife, bowl or small bucket for peelings, wooden spoon, chopping-board, saucepan to hold five pints or more, wire sieve or colander.

Wash the potatoes in the bowl or bucket, pour away the dirty water, and cover the potatoes with clean water; bring them to the table, peel a thin rind off, rinse in the water contained in the bucket, and as each potato is finished, slice into the basin of clean cold water. Next peel and slice the onions. Keep the root end upwards, and the strong aroma will be less likely to draw tears from the eyes. Put the saucepan or pot over the fire; see that it is perfectly clean. First pour in three pint jugs of cold water;[1] add the potatoes, rinsing them as you raise each handful out of the water; next place the onions, and then the 1 oz. of dripping (or butter), add 1 saltspoonful of salt, ¼ ditto black pepper (or white if preferred); let it boil for ¾ of an hour. Whilst it is boiling, mince the parsley and thyme, about one tablespoonful of parsley and a teaspoonful of thyme. Clear down the table; either consign the peelings to the pig's tub, or better still, put them under the grate to dry and burn in the afternoon. Place the thyme and parsley on a saucer. When the soup has boiled the proper time, put a piece of board on the table as a pot rest, or an old newspaper will do, but the former is most tidy. Lift out the potatoes on to the wire sieve, which should be placed over a clean basin, press the potatoes, etc. through. Return the soup to the saucepan, add parsley, thyme, and one teaspoonful of sugar. Let the whole boil up for one minute, and serve. On a clean plate pieces of thin toast cut into little dice, or plain bread, should be sent to table with the soup. Cost about 3d., sufficient for four to six persons.

2. Cutlets of Conger Eel, Cod, or Hake.—*Ingredients*—Fish, 2 lbs.; flour, parsley, salt, pepper, dripping (lard or oil). *Utensils*—Frying-pan or kettle, fish-slice, knife, chopping-board, plate.

Buy about 2 lbs. of conger eel. The middle cut is best, and costs about 4d. per lb., never more. Cut this into five cutlets or slices, wash and dry it, and lay it on the chopping-board. Place on the fire the frying-kettle or frying-pan; have in it enough fat (dripping, lard, or oil) to cover the fish, and whilst it is attaining the proper degree of heat, dip each piece of fish into a mixture of 1 tablespoonful of flour, ½ teaspoonful of salt, and a very little pepper. See that every portion of the cutlet is covered; rub the flour in near the bone, shake off any loose flour, and plunge into the boiling fat. (*N.B.*—It is best to test the fat by throwing in a piece of crumb of bread; if that browns readily, the fat is hot enough for frying purposes. Fat makes no noise when it boils. The spluttering often mistaken for boiling denotes the presence of water in the fat, and it ceases when the fat really does boil.) When the fish is a golden brown, take it out and drain on kitchen paper, sprinkle salt over and serve on a hot dish, garnish with fried parsley. Take the parsley, wash it well, dip in boiling water, having a small piece of soda dissolved in it. Pick off the long stems, dry in a cloth, and place in *boiling* fat for one minute; lift it out, drain on paper, and arrange tastefully round or on the fish. Uncooked parsley should never be sent to table with hot fried fish. It shows a want of knowledge. Cost 10d., sufficient for four people.

---

[1] Meats and vegetables required for soups are always put into cold water, to extract their good qualities into the liquor.

3. **Beef Rolls and Haricots.**—*Ingredients*—1 lb. lean beef; 2 oz. stale crusts of bread; thyme, parsley, and other herbs; pepper, salt, onion, flour, suet (or fat from beef), carrots, turnips, celery seeds, celery leaves dried, or celery stalk if obtainable; water, 1½ pints; haricot beans, 1 pint; soda. *Utensils*—Basin with cold water to soak crusts, sharp knife, chopping-board, stew or sauce pan, reel of white cotton.

Put the crusts of bread into cold water for one hour previous to requiring them. Take 1 lb. of gravy beef, cut into thin slices, say five or six; let them be as nearly uniform as possible, perhaps three inches long and three wide; dip each piece in a mixture of flour, salt, and pepper, prepared as in No. 2. Squeeze the water thoroughly out of the bread crusts, chop ¼ oz. of onion, add 1 teaspoonful of minced parsley and thyme, with a little celery, mix with the bread, season to taste with pepper and salt. Lay a little of this stuffing along each piece of beef, roll it up and fasten a little binding of white cotton round, and place in the sauce or stew pan. Pour over 1½ pints of water. Scrape and wash a carrot, peel a turnip, wash and slice both into the pan. Place the whole over the fire, and stew slowly for 2½ hours. Wash and pick 1 pint of haricot beans, place in a saucepan with sufficient boiling water to cover them, add a teaspoonful of salt and a piece of washing soda as large as a bean. Boil rapidly for 2½ hours, adding boiling water from kettle or boiler from time to time, so that the beans may always be covered. Mince sufficient parsley to fill a large tablespoon, wring it in the end of a towel after mincing. When the beans are soft, which is ascertained by taking one out on a spoon and pressing between the finger and thumb, drain them. Take a meat dish, arrange the beans round like a wall between the rim and the centre, leaving a space for the rolls. Take the rolls out and put on a clean plate or board; return the saucepan to the fire, and let the gravy boil very fast to reduce it. In the meantime take off the threads and lay the rolls in the centre of the dish, pour the gravy over, removing the carrot and turnip; sprinkle the parsley over the beans, and serve at once. Cost about 1s., sufficient for five people.

4. **Cabbage to boil.**—*Ingredients*—Cabbage, salt, soda, sugar, water. *Utensils*—Saucepan, wooden spoon, wire sieve or colander.

Wash the cabbage in salt and water; in summer a spoonful of vinegar removes the larvæ most effectually. It will do no harm to let it lie in the water ten or fifteen minutes, whilst the saucepan or pot is placed on the fire with enough water to thoroughly cover the cabbage. Put into the water one teaspoonful of salt and one of sugar, also a little piece of soda as large as a bean; when it boils, then put in the vegetable. Cook it with the lid off for ten to fifteen minutes, not longer. Drain in the wire sieve or colander, press the water well out and place in a dish. Cut into dice with a knife after dishing, and send hot to table. Cost 1d., enough for three persons. (*N.B.*—All good professional *chefs* use sugar in boiling green vegetables, such as cabbage, beans, pease, etc., however young they may be, and sugar is added to all their soups containing vegetables. Every housewife on the Continent knows and practises this rule.)

5. **Stewed Apples.**—*Ingredients*—Six apples, sugar, cloves, ginger, water. *Utensils*—Basin, knife with a sharp point, saucepan or covered earthenware jar.

Pare six apples very thin, cut out the cores from the bud of the apple with the point of the knife, taking care not to destroy the symmetry of the apple or waste the flesh. Now put the rinds and cores into a small saucepan with 1 cup or ¼ pint of cold water; place over the fire, and stew slowly for quarter of an hour. Place in the heart of each apple one clove. Mix a little sugar and ground ginger to taste; fill the apples with this mixture and place them in the stewpan. Strain the liquor from the rinds, etc. over, and stew from ten to fifteen or twenty minutes, according as the apples are good cookers or not. Keep the fruit as whole as possible, and serve in a glass dish. Cost, according to kind of apples used, from 3d. to 1s., sufficient for six people.

6. **Coffee with Milk.**—*Ingredients*—1 oz. coffee, ½

pint milk, 1 pint water. *Utensils*—Kettle, saucepan, coffee pot, jug, strainer, paper.

Put freshly-ground coffee into a jug, pour on it one pint of boiling water, put a paper cap over the jug, and stand on the hot plate or on the oven. Boil $\frac{1}{2}$ pint of milk; just as the milk is on the point of boiling strain the coffee into it, lift at once from the fire, as it must not boil after receiving the coffee, and pour into a well-heated coffee pot or clean warm jug. Cost 2d. 1 pint, enough for two persons.

Lesson II.

1. **To Prepare Flour for Melted Butter and White Sauces.**—*Ingredients*—Flour, water. *Utensils*—Basin, dredging box, pudding cloth, wooden spoon, saucepan, wire sieve.

Take a quart basin, fill it with flour, press it down tightly and firmly into the basin. Wet a pudding cloth in boiling water, dredge it over with flour and tie it securely on, and place in a saucepan with boiling water. Let it boil five or six hours, the longer the better; add boiling water every hour or so to keep the basin and its contents well covered with water. Cold water would crack the basin and water soak the flour. When it is sufficiently boiled, remove the cloth. Let it become cold; with a knife remove the paste-like surface, and pass the rest of the flour through the wire sieve by means of the wooden spoon; let the flour fall upon a clean paper or plate. Put it into a dry canister and it is always ready for use. It is this prepared flour that makes the melted butter and white sauces of the Continent of Europe and America so delicious and superior to the general English manufacture.

2. **Melted Butter.**—*Ingredients*—Flour, butter,

milk (cream, if required very good), salt, pepper-corns, whole mace. *Utensils*—Saucepan, wooden spoon. Take 2 tablespoonfuls of prepared flour (Paragraph 1, Lesson II.), put it into a saucepan, with ½ oz. of butter; place over the fire, and with a wooden spoon gradually work the flour and butter together till they form a paste; add a breakfast cupful or ½ pint of milk (or cream) by degrees, about a tablespoonful at a time, so that there are no knots or lumps in the mixture. Stir all one way, add pepper-corns and whole mace. Let it just come to the boil. Lift off and season with salt to taste, strain and serve. The flour being already cooked, much time will be saved in the preparation.

3. Pea Soup.—*Ingredients*—½ pint split pease, or 1 packet Dr. Geylen's pea flour, two quarts of liquor in which ham, salt beef, or any meat has been boiled, a carrot, turnip, onions, dried mint, pepper. *Utensils*—saucepan, knife, wooden spoon, wire sieve.

Wash and pick the split pease in the wire sieve; put them into a saucepan with two quarts or more of liquor in which meat has been boiled. Let them boil rapidly for two hours, then add thin sliced carrot, turnip, onion, and a little pepper; boil twenty minutes longer, pass all through the wire sieve, warm up in the saucepan for a minute; put powdered mint into the tureen, pour the soup on this. Send toasted bread in strips or dice on a plate to table with this soup. If Dr. Geylen's packets are used, it will save a great deal of trouble and boiling, and it is ready flavoured. Cost 4d., enough for six persons. *N.B.*—A capital plan is to grind the pease in a coffee mill, mix the flour with cold water, and stir in when the water or liquid boils.

4. Cod boiled.—*Ingredients*—Cod, salt, vinegar,

pepper-corns, cloves, water. *Utensils*—Dish, kettle or pot, fish-slice.

Let the water boil, add a teaspoonful of salt, two do. vinegar, six pepper-corns, three cloves. See that there is enough water to quite cover the fish. Boil, according to the thickness of the fish, from ten to twenty minutes; try if the fins will easily pull out, or the flesh leave the bone; if so, it is done. Lift it off the fire, and let it stand for three minutes in the hot water, so that the albumen may set and the fish be firm. Carefully lift the strainer out of the fish-kettle and slip the fish on to a hot dish, on which is nicely folded a clean warm fish cloth or fish paper. Send melted butter (No 2, Lesson II.) in a sauce-boat to table with it, and garnish with pickled walnuts or parsley. Chopped parsley or fennel may be mixed with the melted butter; it then becomes parsley sauce, etc.

5. **Roast Beef Heart.**—*Ingredients*—Heart, beef suet, bread crumbs, thyme, parsley, lemon peel, shallot or onion, pepper, salt, egg. *Utensils*—Large pan or tub to wash the heart, basin to mix stuffing, chopping-board, sharp knife, saucepan and roasting jack, or American oven.

Soak the heart in water and a little salt for ten minutes, thoroughly clean, cut off the 'deaf ears,' and trim nicely. Place it in a saucepan of boiling water, boil for an hour. This tenders the heart and renders it digestible, and prevents its having the nasty sticky taste in the mouth after eating. Whilst it is boiling prepare the stuffing. Either make some bread crumbs by rubbing 2 oz. of soft white bread through a wire sieve, or soak some crusts in cold water and squeeze them dry; mince 1 oz. of suet, a table spoonful of herbs, and a tiny piece of the outer rind of a lemon; mix with the bread crumbs, season with pepper and salt. Mince a shallot or small portion of onion, mix that with the stuffing, and then fill the tubes of the heart. Take a piece of clean paper, spread dripping over it, and fasten it round the heart, fix on the jack, have plenty of dripping in the pan to baste it with. Place the meat close to the fire for about five minutes, then draw it back a little. Roast for as many quarters of an hour as there are pounds of meat, keeping the whole thoroughly well basted, and the fire in front bright and clear. Cost about 3s., sufficient for six or seven people.

6. **Potatoes Sauté.**—*Ingredients*—Small potatoes, dripping (lard, butter, or oil), salt. *Utensils*—Basin of clean water, bowl or bucket for refuse, knife, small frying-pan, saucepan, kitchen paper.

Small potatoes are best and look best when they are to be used for *sauté.* Peel them, keep them as uniform in size as possible, throw each as it is done into cold water; place over the fire a saucepan with boiling water, add a little salt, and put in the potatoes; boil for five minutes, drain off the water, put the pan back over the fire for a few seconds to dry the potatoes thoroughly, but do not let them burn. Now either put 2 oz. of dripping or butter into a frying-pan, or take the potatoes out and place it in the saucepan; put it over the fire and let it reach boiling point, then plunge in the potatoes, toss them in it till they are covered with the fat. Let them become a rich golden colour, drain on clean paper, sprinkle with salt, and serve. Cost 1½d. per lb., enough for four persons.

7. **Carrots à la Hollandaise.**—*Ingredients*—Carrots, butter, parsley, water, salt, soda. *Utensils*—Scrubbing brush, clean cloth, basin of water, two saucepans.

Choose six or eight small, bright-coloured carrots of uniform size, scrub them, place them in a saucepan half full of boiling water, throw in a lump of soda as large as a bean, and ½ a teaspoonful of salt. Boil twenty minutes; lift the carrots out, wipe off the outer skin with the cloth, lay on a plate. Now melt ½ oz. of butter, toss the carrots in the boiling butter over the fire, sprinkle finely minced parsley over them, and serve hot. This is a favourite dish with the Dutch, and is a nice way of dressing a very wholesome vegetable. Cost 2d., sufficient for three people.

8. **Baked Custard Pudding.**—*Ingredients*—Eggs, milk, sugar, butter, essence of lemon. *Utensils*—Egg beater or steel fork, basin, pie-dish.

Break one egg into a basin, whisk it well so as to thoroughly blend yolk and white, add ¼ pint milk and 2 lumps of white lump sugar crushed. Raw sugar often contains an acid which turns the milk sour, curdles the egg, and spoils the pudding. Grease a pie-dish with dripping or butter, add two drops of essence of lemon, and pour the mixture into the dish. Bake in a very cool oven for one and a half or two hours, and the pudding will be a success if it sets gradually. The mild heat prevents the watery or honeycombed appearance so general in a badly-prepared custard. Cost 2d., sufficient for two people.

CHAPTER III.

FOODS FOR FEBRUARY, WITH TWO MENUS.

Vegetables.—The same as in January, with leeks, broccoli, cresses, lettuces, radish, etc. *Fruits.*—As last month; also rhubarb. *Meats.*—Beef, mutton, pork, veal, lamb. Chicken, ducklings, wild fowl, turkey poults, hares, partridges, etc. Fish as in January, with dabs, ling, &c.

LESSON III.

1. **Giblet Soup.** — *Ingredients* — Giblets, feet, and neck of a fowl, duck, or goose. 1 lb. bones crushed, sweet herbs, onions, pepper, salt, water, a mushroom, or mushroom peelings and stalks. *Utensils*—Hammer, clean cloth, knife, basin of water, large saucepan or pot, wire sieve.

Clean and wash the giblets, plunge the feet into boiling water, and remove the outer skin and nails with the assistance of a knife. Put the bones in a clean coarse towel, and break them with a hammer on the floor. Next rinse them. Put all into a saucepan or pot, with seven pints of water. Let the whole boil for five minutes; throw in a teaspoonful of salt, skim well, then add the herbs, onion, and seasoning, simmer for three hours; add mushroom or mushroom ketchup to flavour. Strain when reduced to about three pints of liquor, pick out the giblets, cut into dice, taste the soup and add more salt, etc. if necessary, return the giblets to the soup. Toast a thin slice of bread, butter it, place it in the tureen, pour the soup on this, and serve at once. Cost 8d., sufficient for four or five people.

2. Herrings to Marinade.—*Ingredients*—Herrings, vinegar, sugar, shallot, water, salt, pepper, bayleaf, cloves. *Utensils*—Knife, cloth, basin with water, chopping-board, deep pie-dish.

Take six herrings, cut off the heads, scrape off the scales, and open them down the back; take the backbone between the finger and thumb, raise it up from the flesh and pull it out, wipe the fish dry, remove the roe or melt. Season with pepper and salt, and roll up the herring from the tail. Place in rows in the pie-dish, add ¼ pint of vinegar and a cupful of water, put in a lump of sugar to tone down the rough taste of the acid, add one bay leaf, a shallot, and two cloves; bake for about one hour in a moderate oven. Cost 6d., sufficient for six people. The roe or melt is nice fried and served on toast.

3. Cornish Collops.—*Ingredients*—Sheep's pluck (without the head), flour, pepper, salt, herbs, onions, marigold. *Utensils*—Knife, chopping-board, saucepan, basin, wooden spoon.

Clean and parboil the liver and lights (the heart is nice roasted or baked, prepared as in No. 5, Lesson II.). Chop them very fine, removing all string-like substance. Peel and mince an onion, also chop a teaspoonful of parsley, and a little thyme pulled off the stalks. Put all this into the saucepan with the liquor in which the pluck was parboiled. If not enough to cover the meat, add more water. Stew for one hour. Mix in a basin one tablespoonful prepared brown flour (No. 1, Lesson IV.) with water, stir amongst the collops, let the whole boil two minutes, and serve with thin slices of toast cut in three-cornered pieces. Cost 6d. to 8d., sufficient for five to six people.

4. **Leeks.**—*Ingredients*—Leeks, bread, flour, butter, milk, salt, water. *Utensils*—Knife, stewpan, basin, wooden spoon, saucepan, toasting fork.

Trim six leeks, cut them into uniform lengths. Place them in a stewpan with boiling water and a little salt. Let them simmer gently for threequarters of an hour. Toast a round of bread cut into six, butter and place in a vegetable dish. Make melted butter (No. 2, Lesson II.). When the leeks are tender, lift out on the toast, cover with melted butter, and serve at once. Cost about 4d., sufficient for four or five people.

5. **Bread and Apple Pudding.**—*Ingredients*—A thick slice of stale bread, or stale crusts, two apples, sugar, essence of lemon, one egg, or two tablespoonfuls of flour. *Utensils*—Two basins, teacup, wooden spoon, wire sieve, saucepan, paper.

Soak the bread in water or milk, squeeze it quite dry after being in the liquid an hour. This is better done by means of a steel-wire sieve, into which the bread is put and the liquid expressed with a wooden spoon. Now place the crumbs back into a dry basin. Pare two apples, core and slice them in thin delicate slices, adding them to the contents of the basin. Next break an egg into a teacup, and if fresh, add it also, with one tablespoonful of raw sugar, and three drops essence of lemon. (*N.B.*—2d. worth of essence of lemon in a small bottle is the cheapest and best method of buying essence of lemon if not home made; it will last a long time if judiciously used.) Mix the whole well together, grease a basin (or mould), and steam for one and a half hours. If eggs cannot be afforded, flour as above may be substituted, and quarter teaspoonful of Freeman's baking or egg powder. Cost 3d., enough for four or five people.

6. **Lemon Whey.**—*Ingredients*—New milk, and

lemon, sugar, hot water. *Utensils*—Basin, knife, saucepan, tumbler.

Put on the fire one pint of new milk. Whilst it is heating to boiling point, make an incision in a lemon and express the juice into a clean basin; pick out the seeds, and pare one or two strips very delicately off the rind, taking care that you only remove the yellow surface and none of the white pellicle, as it is bitter. Just as the milk boils, pour in the contents of the basin; let it boil for one minute; pour the whole back into the basin, and let it settle. Carefully drain off the clear liquid or whey, sweeten, and add sufficient hot water to render the drink pleasant. The curds will make a very delicious cheese-cake as under. Cost 2d., enough for two persons.

7. **Curd Cheese-Cakes.**—*Ingredients*—Curd, lemon rind, currants, one egg, flour, Freeman egg powder, dripping, water, sugar. *Utensils*—Basin with curd, pasteboard, rolling-pin, wooden spoon, knife, pie-dish.

Place on the pasteboard three tablespoonfuls of flour, rub into it about 1 oz. or 1½ oz. of fresh dripping or lard, ½ teaspoonful egg powder. Make a well in the centre, and put in enough water to form a firm paste; roll this out thin, grease the pie dish, and line it with it. To the curd in the basin add one egg, a tablespoonful of moist sugar, the grated rind of ½ a lemon, and two tablespoonfuls of washed and picked currants. Bake from half an hour to an hour in a moderate oven. Cost 3d., enough for three persons. (Curd can be bought in the markets of the midland and northern towns.)

LESSON IV.

1. **To Brown Flour for Brown Sauces, Soups, and Gravies.**—*Ingredients*—Second flour. *Utensils*—Baking tray or sheet, wire sieve, wooden spoon.

Take one pint of flour, spread it evenly over the surface of a baking tray, place in a brisk oven, turn the tray frequently until the whole is a rich nut brown. The flour must not be allowed to burn, or it will be spoilt. Should the edges be too much fired, *i.e.* black, carefully remove, and then pass the whole through a wire sieve. Put in a canister for future use. Keep in a dry place. Cost about 2d. or 2½d. at the most.

2. **Gravy Soup.**—*Ingredients*—Carrot, turnip, onion, pepper, 2 lbs. shin of beef, or bones from roast joint, or 2 lbs. neck part of beef, salt, herbs, prepared brown flour, water. *Utensils*—Knife, meat saw or heavy hammer, pot.

Cut the meat off the bones, take out the marrow and put on one side (the middle cut of the shin or hind leg is most profitable), saw the bone in two or break with heavy hammer. Put it all into a large pot with 3 quarts of cold water. Scrape and slice two carrots, one turnip, and a large onion peeled and sliced, a dessert-spoonful of salt, a bunch of herbs, as parsley, thyme, bayleaf, etc., and a little pepper. Place over the fire, boil for four hours, carefully taking off the scum as it rises, also the fat or oil; add cold water from time to time to keep the required quantity of soup. Before sending to table, strain and thicken with two tablespoonfuls of prepared brown flour (No. 1, Lesson IV.); place in a basin, and mix quite smoothly into a batter with 1 cup or ¼ pint of cold water. Place the strained soup on the fire, let it come to the boil, and then stir in the thickening, pour into the tureen and serve hot. Cost about 1s. 4d., sufficient for ten to twelve people.

3. **Rissoles of Boiled Beef or any Cold Meat.**—*Ingredients*—Meat from soup (or any cold fish, flesh,

or fowl), herbs, pepper, salt, shallot or onion, flour, dripping, water, one egg. *Utensils*—Knife, pasteboard, rolling-pin, chopping-board, round paste cutter, frying-kettle.

Make a little plain paste in the proportions given (No. 7, Lesson III.), roll out very thin, and cut into rings the size of a teacup round. Mince the cold meat, onion, and herbs, season with pepper and salt to taste, mix well together, place portions on one-half of the round discs of paste, wet the edges and fold the other half over, brush over with egg or dip in flour, and fry a golden brown. These rissoles look more ornamental if tossed in bread crumbs, crushed vermicelli, or semolina, after being egged and before frying. Cost about 6d. for twelve people.

4. **Marrow Toast.**—*Ingredients*—Marrow, bread, water, herbs, shallot, pepper, salt, butter. *Utensils*—Small saucepan, chopping-board, toasting fork, knife.

Put on the fire a small saucepan half full of water, and ½ saltspoonful of salt, place the marrow in, let it come to the boil, strain the water off. Put the marrow on the chopping-board, chop it fine. Mince very finely a shallot or ¼ of an onion, also some sweet herbs. Mix with the marrow and season with pepper and salt. Toast a thin slice of bread (butter it if liked), spread on the mixture, and place in the oven for two minutes to warm. Cost 2d., enough for two people.

5. **Mashed Parsnips.**—*Ingredients*—Water, parsnips, butter, salt, white pepper. *Utensils*—Saucepan, wire sieve, wooden spoon, knife.

Wash and peel 1 lb. of parsnips, split the larger ones in four, and put them into a saucepan containing boiling water and a teaspoonful of salt. Boil till they are tender. Pass through the wire sieve after draining. Mix with 1 oz. of butter, season with pepper, and place in a vegetable dish. Cost 1d. or 2d., enough for three people.

6. Stewed Celery.—*Ingredients*—Celery, milk, water, salt, pepper-corns, mace, shallot, flour, butter. *Utensils*—Stew and sauce pans, basin, wooden spoon.

Scrub and trim off the outer leaves of the celery, place in a stewpan with boiling water and a little salt, stew for one hour. Prepare melted butter (No. 2. Lesson II.). Lift out the celery heads, place them on toast, cover with melted butter, serve hot. The leaves that are taken off can be dried for future use as flavouring. Cost 3d. per head, sufficient for two people.

7. Semolina Pudding. — *Ingredients* — Johnston's pure packet semolina, milk, sugar, one egg. *Utensils*—Saucepan, wooden spoon, tea-cup, pie-dish.

Put into a saucepan one pint of new milk. Let it come to the boil; just as it begins to rise in the pan, take one tablespoonful of Johnston's pure semolina in the left hand, and with the wooden spoon in the right stir in the grains gradually as they fall from the left hand held over the pan. As soon as it becomes thick, take it off the fire, stir in a tablespoonful of sugar, break an egg into a tea-cup and if fresh add, working into the semolina and milk with a spoon. Now butter the pie-dish, pour in the mixture, and bake half an hour in a moderate oven. If flavourings are liked, a bay leaf, essence of lemon, nutmeg, etc. may be used. Cost 3d., sufficient for four persons.

8. Apple Water. — *Ingredients* — ½ lb. apples, water, sugar, essence of lemon. *Utensils*—Knife, jug, kettle.

Peel and slice into thin shaves some cooking apples;

they ought to be a sour kind. Have ready a kettle with boiling water; place the apples into a large three-pint jug, with a tablespoonful of white sugar and four drops of essence of lemon; pour over one quart of boiling water, cover with a clean towel. When the liquor is quite cold, strain it off; it is then ready for use. The apples can be put into a custard pudding made as in No. 8, Lesson II. Cost of drink 3d., enough for four people.

CHAPTER IV.

FOODS FOR MARCH, WITH TWO MENUS.

Vegetables.—Artichokes, beet, broccoli, Brussels sprouts, cabbage, carrots, celery, sea kale, lettuce, mushrooms, onion, salad condiments, parsnips, potatoes, spinach, nettles, turnips, turnip tops, watercress, etc.

Fruits.—Forced fruits, as strawberries, rhubarb, etc., chestnuts, oranges, apples, pears, nuts, etc.

Meat, Poultry, Game, etc.—Spring chicken, fowls, ducks, green geese, grouse, levrets, moorgame, pigeons, etc. Beef, mutton, lamb, veal, pork.

Fish.—Brill, carp, cod, conger eel, dabs, dory, flounders, ling, salmon trout, salmon, skate, soles, tench, whiting, etc.

LESSON V.

1. **Haricot Bean Soup.**—*Ingredients*—½ pint haricot beans, 1 oz. onions, pepper, salt, parsley and herbs, water, skim or fresh milk 1 pint. *Utensils*—Saucepan, basin, wire sieve, wooden spoon, knife.

Pick the worm-eaten beans out and place the haricots in a saucepan with three pints of water, saltspoonful of salt, and a tiny piece of soda. Boil two and a half hours till the beans are tender, adding water now and again to keep the beans just covered. Pass the liquor and beans through the wire sieve, which should be inverted over a clean basin. Next return the contents of the basin to the saucepan, with the onion sliced very finely, the parsley and herbs minced; season to taste with salt and pepper. Let this boil over the fire for ten minutes, add the milk, and serve at once. There ought to be about a quart of good soup when finished. Cost 2d., enough for four persons.

2. **Baked Oysters.**—*Ingredients*—A tin of oysters, bread crumbs, salt, pepper, shallot, sauce, butter, bayleaf (nutmeg if liked). *Utensils*—Tin opener, knife, pie-dish, wire sieve, spoon, cup.

Open the tin of oysters, pour off the liquor into a clean cup or small basin. Take the oysters out with a spoon one by one till you have covered the bottom of a pie-dish. Next strew over some chopped shallot (very little suffices) pepper and salt, and a little nutmeg, and a bayleaf. Now put a layer of bread crumbs, then oysters, and finish with bread crumbs; put little pieces of butter, or better still, dripping, over the crumbs. Mix a spoonful of sauce or relish with the liquor in the cup, and pour over the whole. Bake half an hour until the top is a golden brown. Cost (oysters 4½d. per tin) 6d., enough for four or five people.

3. **Boiled Leg of Mutton.**—*Ingredients*—Boiling water, pepper-corns, cloves, salt. *Utensils*—Knife, large pot, clean towel.

Weigh the meat, or if you have no scales, ascertain and remember the exact weight when purchased. Wipe the meat with a clean cloth. Cut the sinews just under the joint, double back the bone and skewer it. Place in the pot when the water is boiling rapidly. Keep the pot over the fire for ten minutes, or till the water has boiled rapidly for about five, then draw it back; add one teaspoonful salt, six cloves, six pepper-corns, and let the whole boil gently quarter of an hour for every pound of meat, and quarter of an hour over. Skimming off the fat and froth from time to time, and keeping the meat covered with water, the liquor will make an excellent foundation or stock for soups and gravies, and must not be thrown away. Chopped capers and melted butter (page 14) mixed are served with this. Cost 10d. per lb.

4. Mashed Turnips.—*Ingredients*—1d. worth of turnips, salt, pepper, water, dripping or butter. *Utensils*—Saucepan, basin, wire sieve, wooden spoon, knife.

Wash and peel the turnips, taking off a thick rind; rinse in clean water. Put them into a saucepan of boiling water; boil from twenty to thirty minutes till tender, lift out of the water, express the water by bruising with the wooden spoon on the narrow side of the wire sieve. Invert the sieve over a basin and pass the turnips through the sieve, season with pepper and salt and $\frac{1}{4}$ oz. dripping; mould to the shape of the basin, and turn into the vegetable dish. Cost 1½d., enough for four people.

5. Sweet Corn (green, in tins).—*Ingredients*—Tin of American green corn, milk, pepper, salt. *Utensils*—Tin opener, saucepan, wooden spoon.

Open the tin, take out four tablespoonfuls; put them into a saucepan with a teacupful of new milk, season with pepper and salt. Let it come to boiling point, stir it round and serve on a hot dish; delicious as a substitute for potatoes, a breakfast or supper dish. Cost (1s. 3d. per tin), dish as above, 5d., enough for four persons.

6. Lemon Pudding.—*Ingredients*—2d. worth of rusks, essence of lemon, $\frac{1}{4}$ lb. suet, egg, sugar.

Utensils—Two basins, chopping-board, kitchen paper, rolling-pin, wooden spoon, cup, knife.

Crush the rusks and put into the basin when quite in a powder, mince the suet, removing all the skin or sinew, mix with the rusk also one tablespoonful of sugar. Grease a small pudding basin and enough white writing paper or kitchen paper to form a lid to the basin. Break the egg into a clean cup and beat it up, drop in five drops essence of lemon. Moisten the rusks, etc. with this, working it in with a wooden spoon, add four tablespoonfuls of milk, place in the greased basin, put the clean paper over, buttered side down, steam for one hour. Cost 4½d., enough for six persons.

7. **Apple Fool.**—*Ingredients*—Apples, sugar, water, milk, egg, cloves or ginger. *Utensils*—Two basins, boiling water, saucepan, clean cloth, wire sieve, wooden spoon, egg beater.

Put 1 lb. of apples into a basin, pour over boiling water enough to cover them, rub off the outer skin, place in a saucepan with a tea cupful of water and six cloves or ginger. Boil till quite tender, pass through a wire sieve into a clean basin. Beat up an egg, boil a tea cupful of milk, add to the egg, whisking the whole time so as it may not curdle, let both cool, sweeten with sugar. Mix the apple and custard together, pile on a glass dish and serve. Cost 4d., enough for six persons.

8. **Barley Water.**—*Ingredients*—Barley, sugar, lemon peel or essence of lemon. *Utensils*—Saucepan, wooden spoon, wire sieve, basin, jug.

Wash about 2 oz. of barley in one or two waters (Scotch or pearl may be used, the former is best). Put into a saucepan with 2 quarts of water, let it simmer or stew for four or five hours, add a little lemon rind, or if essence of lemon is used, it must be after the saucepan is taken off the fire and the barley water strained through the wire sieve and put from the basin into the jug. Sweeten it to taste, and drink when cold. There should be about a pint and a half of barley water when finished. Cost 1½d.

Lesson VI.

1. **Carrot Soup.** — *Ingredients* — Liquor in which meat has been boiled, 1 lb. of carrots, onion, turnip, herbs, pepper-corns, salt. *Utensils*—Saucepan, knife, basin, iron spoon, wire sieve.

Scrape the carrots, slice them, and put into a saucepan with 3 pints of 'stock;' also add an onion, one turnip, a bunch of herbs, parsley, thyme, etc., six pepper-corns, and a little salt. When the carrots are tender, pulp the whole through a wire sieve into a basin. Put the whole back into the saucepan, warm up and serve with toast in dice. A spoonful of sauce improves. Cost about 2d., exclusive of meat liquor.

2. **Breast of Veal Baked.**—*Ingredients*—Breast of veal, bread, suet, thyme, parsley, egg (or a little milk), shallot, pepper, essence of lemon, flour, salt. *Utensils*—Chopping-board, sharp knife, twine, baking tin.

Bone the meat. Either make some bread crumbs, or soak some stale crusts, and wring them dry in a clean towel. Mince 2 oz. of suet, also a shallot, and about a dessert spoonful of thyme and parsley; mix all together, season with pepper and salt. Moisten with an egg or a little milk, and spread over the inside of the veal where the bones have been, roll up tightly, tie it with twine, lay on a baking dish and place in a hot oven. Put a little piece of suet on the top of the meat, shut the oven door, and bake for a quarter of an hour to each lb. of meat. Make brown gravy with some stock, seasoned and thickened with the browned flour as in No. 1, Lesson IV. *N.B.*—The bones will make a delicious stew with potatoes, etc. Cost 9d. per lb.

3. **Nettle Spinach.**—*Ingredients*—Nettles, water, butter or cream, pepper, salt, toast. *Utensils*—Saucepan, chopping-board, knife, wire sieve or colander.

Gather the young tops of the nettles, wash in vinegar and water. Place in a saucepan of boiling water with a lump of sugar, salt, and ½ teaspoonful carbonate of soda. Boil for fifteen minutes, drain, turn them out on the chopping-board after every possible drop of water has been expressed. Chop, season with pepper and salt if needed, place in the saucepan with ½ oz. of butter, warm them up, and serve on toast. This is far superior to market spinach, is more delicate, and has the advantage of cheapness. Cost 1d., enough for ten people.

4. **Rhubarb and Rice.**—*Ingredients*—Rhubarb, rice, sugar, lemon rind. *Utensils*—Saucepan, pudding basin, knife, wooden spoon.

Swell in a saucepan over the fire 2 oz. of rice in a breakfast cup of water. When it has absorbed the water, have ready a buttered basin half or three parts filled with rhubarb peeled and cut into pieces one inch long, lay on this a tablespoonful of sugar and one or two little pieces of lemon or orange rind. Fill the basin up with rice, steam for two hours, turn out of the basin and serve with milk or cream. Cost 2d., enough for four people.

5. **Oatmeal Drink.**—*Ingredients*—Oatmeal, salt,

boiling water. *Utensils*—Kettle with boiling water, jug, spoon.

Take two tablespoonfuls of oatmeal, place in a jug, pour over a pint of boiling water, stir with the spoon, add a little salt. When cold it is fit for use. It should always be mixed up before drinking.

6. **Light Digestive White Bread.**—*Ingredients*—Flour, water, salt, Freeman's Baking Powder. *Utensils*—Basin, sharp knife, pasteboard, baking tins.

Put into a basin 4 lbs. of flour, also one packet of Freeman's Baking Powder. Mix the two together, add a little salt; make a well in the flour with the knife, and mix it into a firm dough, using the knife. Then turn it out on the board, knead it a little, just a turn or two; cut into equal parts, and half fill the baking tins. Place in a very hot oven and bake one hour. The oven should be very hot at first to draw the bread up and make it light. Freeman's Powder is the safest and best to use, as it is free from alum or any like astringent that would be injurious to health. Cost 6d., enough for two half-quartern loaves.

CHAPTER IV.

FOODS FOR APRIL, WITH TWO MENUS.

Vegetables are the same as in March, with the addition towards the end of the month of asparagus, pease, sorrel, radishes, etc.

Fruits the same.

Meats and Poultry similar, with the addition of rooks, wood pigeons, young sea-birds, marrots, etc.

Fish.—Crabs, lobsters, salmon, tench, and skate are in their prime.

Lesson VII.

1. **Chicken Broth.**—*Ingredients*—Bones and remains of cold fowl,—feet, giblets, and neck,—carrot, onion, herbs, vermicelli, water, salt, pepper-corns, cloves, mace, etc. *Utensils*—Saucepan, knife, wire sieve, wooden spoon, basin for skimmings, and one for straining into.

Take the remains of a cold roast or boiled fowl; break up the bones and add any scraps of white meats there may be to spare, such as remains of mutton, veal, etc.,—a ham bone gives an excellent flavour to the stock. Put all into the saucepan, add three pints of cold water, the carrot washed and scraped, the onion peeled, and a bunch of herbs, also six cloves, six pepper-corns, a blade of mace, and a teaspoonful of salt. Simmer slowly for four or five hours; strain through wire sieve into a clean basin. Put the liquor back into the saucepan, and set it over the fire. Break some vermicelli into small pieces, and when the chicken broth in the saucepan boils, drop in about a tablespoonful to the pint of soup. Enough for four persons.

2. **Eel Pie.**—*Ingredients*—2 lbs. sand or mud eels, herbs, egg, salt, pepper, water, flour, dripping or lard. *Utensils*—Chopping-board, fork, knife, pasteboard rolling-pin, pie-dish, hammer, nail.

The most humane manner of skinning an eel, is to strike a fork or nail into its brain, and then nick the skin round under the head, turn it back and pull it off. Cut the eel into lengths of 2½ inches, and place in the pie-dish. Boil an egg hard, that is for a quarter of an hour, take off the shell, quarter it, and place amongst the eels. Mince some herbs and strew in; fill up the dish with eels, and pile them high in the centre. Pour half a cup of water over. Make a paste as in No. 7, Lesson III.; roll it out the size of the pie-dish, cut off stripes and lay them round the edge of the dish; roll out the paste a little thinner, wet the edges of that which is on the dish; cover with the paste, make a hole in the top to let out the steam, ornament, brush over with milk (or egg), and bake for three quarters of an hour in a hot oven. Cost (in South of England), eels, 4d. per lb. Cost of dish, 11d., enough for six persons.

3. **Roast Fowl.**—*Ingredients*—Spring chicken or young fowl, 1 lb. sausage meats, flour, caramel, water, onion, pepper, salt, stock, bread crumbs, milk, and if possible, a little cream or butter. *Utensils*—Large pan for the feathers, chopping-board, knife, dish cloth, two basins, jug, saucepan, roasting jack. If for open range, a clear fire; if closed, the roasting oven well heated.

Pick the fowl well and carefully, taking care to remove all the ‘stubs,’ and to keep the skin whole, particularly on the breast. Light a piece of paper, hold it in the left hand, and with the right pass the fowl over the burning paper, so that all the hairs may be singed off. Take a pint jug or a deep basin and fill with *boiling* water; at once plunge the bird's feet into this, and the outer skin will peel off. (*N.B.*—Never thrust the feet between the bars; it is a dirty trick, practised only by slovenly, lazy cooks.) Cut the claws off at the first joint. Next lay the bird on the chopping-block breast downwards, cut a slit in the skin, remove the crop, and from the aperture thus formed loosen the liver, etc., very gently as far as you can with fore and middle finger. Loosen the skin down about the neck, and cut the flesh and bone off close to the backbone, cut the outer skin two inches from it towards the head. Cut off the vent, and carefully draw out the intestines, taking particular care to pass the finger above the liver so as not to burst the gall bladder, or the fowl will be spoilt. This applies to all poultry and game. Separate the gizzard, liver, and heart from the rest of the entrails; put the refuse away, and the giblets, neck, etc. into a basin; wipe out the fowl with a clean dish-cloth. Carefully open the gizzard, remove the contents, wash in clean water. Next cut out the gall bladder carefully from the liver, wash the latter, and remove the refuse. Put half the gizzard in one wing, just cutting it in the centre, and making an incision in the thin skin of the wing, and half the liver in the other; fold the pinion back so that the liver and gizzard face the breast. Put a skewer through the joint of one pinion and the middle of the leg, and passing it through the body, fix the other leg and wing on. Thrust another skewer through the small of the leg and the sidesmen, and fix the feet in position; fasten down the neck and vent, after putting in the sausage meat. Dust lightly over with flour and attach to the jack, leaving the neck downwards. Have some dripping in the pan under the jack, and baste the fowl well during the process of roasting. Time to roast, one hour. Cost 3s. 4d., enough for six people.

4. **Gravy for Fowl.**—Take some baked flour, say one tablespoonful for 1 pint of gravy, mix it with two tablespoonfuls of nicely-flavoured cold stock (or skin the head of the fowl, put the half gizzard, liver, and the neck on in one pint of water, and stew for two hours); flavour, and when cold use. Put on the fire $\frac{3}{4}$ of a pint of stock and an onion, let it boil, stir in the flour, thickening; boil for two minutes, and serve round the roast fowl.

5. **Bread Sauce.**—This is a difficult sauce to prepare well. If not delicately manipulated and a little judgment used in its preparation, it will resemble a good poultice rather than a delicate sauce to serve as an adjunct or appetizer. Make 3 oz. of bread crumbs by rubbing stale bread through a wire sieve. Place them in a quart basin. Next peel an onion, place it in a saucepan, add three cloves, four pepper-corns, and 1 pint of milk, also a piece of salt butter as large as a walnut; stir till it boils, then strain over the crumbs in the basin, stir it well, season with salt and cayenne pepper. Transfer to a hot sauce-boat or tureen, and serve quickly. (*N.B.*—Some people prefer to boil the sauce after pouring the boiling milk over the crumbs, but French *chefs* never do so, as it renders the bread heavy and gluey to the palate.) A little cream is an improvement. Cost 2½d., enough for six persons.

LESSON VIII.

1. **Cauliflower à la Mode Françaís.**—*Ingredients*—Vinegar, cauliflower, butter, bread raspings, pepper,

salt, water. *Utensils*—two basins (large and small), saucepan, knife, bread-grater or rasp, small baking tin or sheet.

Trim the cauliflower, take off all the green, and divide into branches, keeping them of a uniform size. Plunge them into vinegar and water, in the proportion of a tablespoonful of vinegar to a large basin of water. Next put a saucepan over the fire with water. Let the water boil; add a dessertspoonful of salt, and throw in the branches of the vegetable, first rinsing each carefully. When tender, place on a wire sieve or clean towel to drain. Melt 1 oz. of butter (or more if the cauliflower is very large), dip each piece in the butter. Have in a paper some bread raspings not of too dark a brown; season them with a little cayenne, and toss each piece of vegetable in this place on a buttered tray, and put into the oven to brown for six or eight minutes.

2. Macaroni Pudding.—*Ingredients*—2 oz. Naples macaroni, milk, water, sugar, egg. *Utensils*—Pie-dish, egg-beater, spoon, basin.

Break the macaroni into little pieces about 1 inch long, place in a pie-dish and cover with a teacupful of water. Place this in the oven two hours before the pudding is required; in about a quarter of an hour it will have absorbed the water. Now add 1 pint of milk; put it back into the oven, which should only be moderately hot, half an hour before sending to table; add the egg, well beaten and sweetened to taste. When finished, it ought to be like a custard, of a delicate bright orange or golden hue. It is a much better plan than the tedious and unnecessary method of boiling first. In Italy the peasantry frequently soak the macaroni for two or three hours previous to cooking, using the liquid in which it was steeped so as not to waste any of the food. Cost 3½d., enough for four persons.

3. **Treacle Pudding.** — *Ingredients* — Suet, treacle, flour, milk, essence of lemon, butter, candied lemon peel. *Utensils*—Two basins, wooden spoon, knife, chopping-board.

Mince 2 oz. of suet very finely, and 2 oz. candied peel. Put the 3 oz. of treacle into a quart basin, add ½ a teacupful of milk, stirring it in by degrees, now add the suet and three or four drops essence of lemon. Put in enough flour to make a stiff batter, about ¼ of a lb. or rather more if the flour is of fine quality and dry. Grease a basin or mould, fill about ¾ with the mixture, cover with a buttered paper, steam for 2½ hours.

4. **Choca—after-dinner drink.**—*Ingredients*—1 oz. coffee, chocolate cake (or chocolate powder, Fry's 6d. per lb. retail), milk, loaf-sugar. *Utensils*—Two jugs, saucepan, spoon, strainer.

This was a favourite beverage of the late Emperor Napoleon III. Make an infusion of 2 oz. of freshly ground coffee, as at page 14. Put ½ pint of milk in a saucepan, and let it come to the boil. Scrape finely a penny stick or tablet of chocolate into a pint and a half jug. When the milk boils, take a spoon in the left hand, and the saucepan in the right, pour a little of the boiling milk over the chocolate, stirring it very rapidly all the time until it is well mixed, then add the rest of the half-pint. When it is thick and free from lumps, pour in the coffee, putting a strainer over the top of the chocolate jug to prevent any of the grounds entering, as they would spoil the drink. If Fry's Chocolate Powder is used, two teaspoonfuls can be used instead of the tablet; of course it is not so rich or delicate in flavour as their tablet chocolate, but it is nourishing, cheap, and suitable for everyday use. Cost 4d., enough for two people.

CHAPTER VI.

FOODS FOR MAY, WITH TWO MENUS.

Vegetables.—Artichokes, asparagus, beans, cabbage, cauliflowers, carrots, onions, lettuce, new potatoes, radishes, sea kale, sorrel, spinach, turnips, all kinds of herbs and summer salads, beet leaves, etc.

Fruits.—Currants, gooseberries, rhubarb. Frame and hothouse fruits and gourds, as melons, cucumbers, strawberries, peaches, grapes, etc.

Meats, Poultry, etc.—Beef, mutton, veal, lamb, chicken, ducklings, fowls, green geese, leverets, pigeons,

Fish.—Brill, carp, cod, conger eel, crabs, cray-fish, dabs, dory, eels, flounders, gurnets, haddock, halibut, herrings, ling, lobsters, mackerel, mullet, perch, pike, plaice, prawns, salmon, shrimps, skate, soles, sturgeon, tench, trout, turbot, whitings.

Lesson IX.

1. Fish Soup.—*Ingredients*—The liquor in which fish has been boiled (p. 16), or the bones of fish which has been filletted, meat, stock, suet, flour, herbs, any cold fish, one egg, pepper, salt, seasonings, bread crumbs. *Utensils*—Fish-kettle, wire sieve, basin, spoon, knife, chopping-board.

Place a saucepan or fish-kettle over the fire with the liquor in which cod, salmon, or other fish has been boiled; add a bunch of sweet herbs, and season to taste. If you require to make fresh stock, put the bones of a plaice which has been filletted into the fish-kettle with

2 pints of cold water and one of meat stock; add seasonings, pepper, and other savoury spices to taste, salt, and a bunch of herbs. Stew for four hours; strain and prepare either as follows:—Pass 2 oz. of stale bread crumbs through a wire sieve, mince very finely 2 oz. of mutton suet, and 2 oz. of cold fish if obtainable, or cold meat, also a few leaves of parsley and thyme; put all this into a basin, and with it two tablespoonfuls of flour, $\frac{1}{4}$ do. Freeman's Baking Powder, seasoning with cayenne and salt. Mix all this well together; next break an egg into a basin, whip it with a fork or an egg-beater, and add as much as will make the whole into a firm dough; roll into tiny balls like little marbles, and when the liquor in the pot boils, put them in, add an onion shred into thin rings, boil ten minutes or quarter of an hour, and serve. Cost 3d., exclusive of fish liquor, enough for six persons (1 qt.).

2. **Fillets of Plaice.**—*Ingredients*—Plaice, egg, bread crumbs, fat or oil for frying, salt. *Utensils*—Fish or chopping board, knife, plate, towel, kitchen paper, frying kettle or deep frying-pan.

First prepare the bread crumbs by passing 2 oz. of stale bread crumbs through a wire sieve. Have a piece of kitchen paper or clean wrapping paper under the sieve; next break an egg over a plate, and whip it up with a knife until perfectly blended. Lay the plaice on the fish or chopping board, with the black side towards you, and the head to the right hand; cut the skin just above the tail; take a towel in the left hand, and, holding the tail firmly, pull off the black skin and lay it on one side. If you intend making fish soup, this skin is rich in gelatine, and with the bones well stewed makes the best of stock. With a sharp-pointed knife (a butcher's knife is best) make an incision down the middle of the fish, from head to tail, taking care to keep *on* the backbone of the fish. Then turn the side towards you. With the left-hand fingers press the flesh from the bone, slip in the knife; keeping the keen edge towards the bone, slice off the flesh in one slice. Cut it down by the fins. Divide into two or more strips length-wise according to the size of the fish, leaving them about 1½ inch wide; cut off the other side to match, then turn the fish over, and fillet like the top side, but without removing the white skin; flour all the pieces; put the bones into the pot to stew, dip each fillet into egg, cover thoroughly, toss in bread crumbs, take the broad end in the left hand, turn the fish that was next the bone outside, and make a loop or tie by taking the thin end in the right hand, passing it *under* and letting the point drop over the top edge of the roll. Then fry in boiling fat as directed at page 11. Cost of plaice 8d. to 1s., egg, etc. 2d., enough for six people. Soles cooked in this manner are very delicious garnished with half slices of lemon.

3. Stewed Trout.—*Ingredients*—Trout, milk, Johnson's cornflour, lemon, sugar, cayenne, mace, cloves, pepper-corns, salt, nutmeg, shallot. *Utensils*—Fish-kettle or stewpan, knife, basin, wooden spoon, small saucepan.

Clean the trout, fix the tail in the mouth, fasten with a small skewer or piece of wood sharpened, lay them in the fish-kettle side by side, cover with new milk, and place over the fire to stew. Peel the shallot, pare a *very thin* rind off the lemon, add a blade of mace, three cloves, six pepper-corns, a piece of nutmeg as large as a pea, and no salt, or the milk will curdle; let this be put into the pan with the fish. When the milk rises to boiling point (watch it till it does, so that it may not boil over), put on the lid and remove the pan to the side of the fire. Let it simmer gently for quarter of an hour.

Carefully lift the fish on to a hot dish and keep warm; strain the milk and put into a small saucepan, which set over the fire. Mix a tablespoonful of Johnson's cornflour with a little cold milk, stir this into the milk in the saucepan; when it begins to boil, stir rapidly. Let it boil two minutes, add salt, and season with cayenne and the strained lemon juice, and pour over the trout. (*N.B.*—Half a teacupful of cream added to the sauce is a vast improvement for those who can afford it. It is, however, delicious without it.)

4. **Lamb à la Gothard.**—*Ingredients*—Neck of lamb, large sago, dripping, second stock, salt, pepper, nutmeg, herbs, parsley, shallot or onion, egg. *Utensils*—Large basin, baking dish, knife, wooden spoon, saucepan, pie-dish.

Soak 2 oz. of large sago in a teacupful of water all night, leaving it in the basin till about an hour and a half before dinner, then put it into a saucepan with 1 pint of second stock, *i.e.* the liquor from the second stewing of meat or fowl bones, etc. Let it stew one hour with the following seasoning:—An onion finely shred, a little parsley and sweet marjoram finely minced, a very little grated nutmeg. Put into the oven a neck of lamb, bake for an hour, basting well. Cut it into nice joints and lay in a greased pie-dish; pour the sago into a basin, break an egg into a cup or basin, and if good beat up with the sago. Pour the whole over the meat, put a little dripping on the top, and bake a light brown about half an hour. This is a nourishing dish for invalids or children. Cost: lamb, 8d. per lb.; sago, 5d. per lb.

5. **Savoury Potatoes.**—*Ingredients*—Potatoes, thyme, onions, sweet marjoram, milk, dripping. *Utensils*—Basins, knife, water to wash the potatoes.

Wash the potatoes and peel them, putting them into a basin of cold water one by one as they are done. Next wash and pick off some leaves of thyme and marjoram, peel and slice three or four onions, slice the potatoes and lay them in layers in the saucepan, with onions, herbs, pepper, and salt sprinkled between. Add ½ pint of milk and 1 oz. of dripping. Cover closely with the pot lid, and stew for three-quarters of an hour. The steam must cook them, as no water is to be added. Try with a fork, and when quite tender, serve at once. This is a capital dinner for children.

6. **Lettuce Stewed.** — *Ingredients* — Drumhead lettuce water, gravy bread, sugar, soda. *Utensils*— Saucepans, knife, basins, water, wooden spoon.

Boil the lettuce after cleaning as if cabbage, at page 12, after draining in a wire sieve. Put ½ pint of gravy in a saucepan, let it be good and well seasoned. Lay the lettuce in, and put it by the side of the fire to stew for ten minutes. Prepare some toast, place it on a vegetable dish; with a spoon lift out the lettuce, place neatly on the toast, pour the gravy round. Serve hot. Cost 3d., enough for six persons.

7. **Delicious Pancakes.**—*Ingredients*—Flour, one egg, Freeman's Egg Powder, essence of lemon, loaf-sugar, milk, dripping, lard, or butter. *Utensils*—Basin, cup, saucepan, egg-beater, wooden spoon, frying-pan.

Weigh out and place in a basin 3 oz. of flour, mix with it ½ a teaspoonful of Freeman's Baking Powder. Warm to blood-heat ½ a pint of milk and 2 oz. of dripping or butter, together with 1 oz. of lump sugar. Add this by degrees to the flour in the basin; break an egg into a cup and beat it a little, whip the whole well together for ten minutes. Add four drops of essence of lemon. Put into the frying-pan 2 oz. of dripping, let it get quite hot. Pour in a little of the batter so as to cover the bottom of the pan; fry till set and a light brown, then turn and fry the other side. Drain on wrapping paper. Spread over with jam, roll up and place on a hot dish in the oven to keep warm. Be sure the fat is quite boiling before pouring in the batter. Cost 5d., enough for six persons.

8. **Ginger Syrup.**—*Ingredients*—A 10d. bottle of essence of ginger, or 1s. worth of spirit of ginger from the chemists, lump sugar, water. *Utensils*—Kettle with boiling water, preserving pan or enamel saucepan, silver spoon.

When the water in the kettle boils, place the preserving pan over the fire, seeing first that it is spotlessly clean; pour in one pint of the boiling water, add one pound of the best lump sugar. Stir it until the sugar is melted, skim it carefully, removing all scum that may rise on the surface. When quite clear and thickish, lift off the fire; and when it has stood three minutes, stir in the essence or spirit of ginger, bottle, cork, and seal at once. One teaspoonful in a wine glass of water is a good stomachic; the same quantity in half a tumbler of water is a pleasant beverage.

LESSON X.

1. **Vegetable Soup.**—*Ingredients*—Potatoes, celery, carrots, turnip, lettuce, pea shells, parsley and sweet herbs, sugar, salt, pepper, and seasonings. *Utensils*—Chopping-board, basins with water, saucepan, knife, spoon, wire sieve.

Clean and peel, scrape or prepare, the vegetables in the usual manner, using ½ lb. potatoes, ¼ lb. carrots, 2 oz. turnip, 2 oz. onions, 2 oz. celery stalks, 1 head Cos or Drumhead lettuce. Prepare the stock by taking any pea shells that have been freshly shelled, boil or stew them for three or four hours, putting them into 2 or 3 qts. of cold water, and adding a little salt. When boiled strain off the liquor, and make up to 3 pints, putting it back into the saucepan; after seeing that no shells are left in, add the other vegetables. Boil for an hour, season with herbs, chopped parsley, pepper, etc., and a teaspoonful of moist sugar added ten minutes before the hour has expired. Next pass through a wire sieve; if too thick add milk, warm up for a minute before serving. This is a wholesome and nutritious spring and summer soup. Cost 3½d., enough for eight persons.

2. **Boiled Turbot.**—*Ingredients*—Turbot, lemon, water, salt. *Utensils*—Large pan or basin to wash the fish in, knife, fish-kettle.

A turbot is really a most difficult fish to cook well. It must be handled as little as possible and yet made thoroughly clean. It is best to clean it at a sink. First put the fish-kettle over the fire, seeing that it is thoroughly clean. Lift the strainer out, and see that it is in good working order. Put in enough water to quite cover the fish, add a tablespoonful of salt and half a lemon, reserve the other half for garnish. Leave it so that the water may boil by the time it is required to cook the fish for table. Next prepare the fish. Remove the entrails and rub the whole fish over with salt, which will remove the slime. Rinse it, and lay it on a board with the black side uppermost. The fins must not be cut off. Take a sharp knife and draw it down the back, cutting to the bone, make a slight incision on either side, an inch from the other, so as just to cut the skin. This saves the white skin on the other side from bursting open. Now lay the fish on the strainer with the white side up and the cut side down. Plunge into the boiling water after removing the lemon. It must just simmer for from twenty minutes to half an hour. In the meantime fry parsley, see page 11. Cut the half lemon into thin rings, cut each circle in half, and divide the rind, again making the corners of the pulp meet. When the fish is ready, lift carefully out of the water; have ready a hot dish with a neatly-folded napkin or large fish paper. Slip the fish off the strainer on to the paper, keeping the white side up; garnish with the lemon and parsley. Oysters fried in batter and fried smelts are sometimes used as garnish for turbot and other large fish when boiled.

3. **Salt Codfish, Hake, etc.**—*Ingredients*—Salt fish, potatoes, cayenne pepper, dripping, egg. *Utensils*—Large pan or basin to soak fish in, saucepan, frying-pan for *a*, or pie-dish for *b*.

(*a*) Soak the fish in cold water for twenty-four hours, changing the water and brushing the fish so as to remove the thin black skin or film on the inside and the dirt on the outside. Place it in cold water when ready for cooking; boil ten minutes, lift it out of the water, pick all the fish off the bones, mince it finely. Pass 1 lb. of cold potatoes through a steel-wire sieve, mix them thoroughly with the fish, season with pepper, form into cakes, brush over with egg, and fry in boiling fat.

(*b*) Boil 1 lb. of potatoes, mash them or pass through wire sieve, mix 1 oz. of dripping with them, season with pepper and salt. Boil the fish as in *a*, pick it from the bones. Put a layer of potato about an inch deep into a pie-dish, lay the fish on this, make some melted butter (page 14). Cover the fish with it, make a crust of the rest of the potatoes, smooth the top, score in diamonds with a knife, put into the oven and bake brown. Cost, salt fish, 2d. per lb.

4. **Veal Cutlet.**—*Ingredients*—Veal, bread-crumbs,

egg, sweet herbs, lemon rind grated, mushrooms, shallots, pepper, salt, nutmeg. *Utensils*—Chopping-board, plate, knife, wire sieve, kitchen paper, nutmeg, water, frying-kettle or pan.

Trim the cutlet neatly, dust it over with flour; pass 2 oz. of bread crumbs through a wire sieve on to some kitchen paper. Mince a small mushroom, a shallot, parsley, thyme, sweet marjoram, and a little chervil if obtainable. Mix these with the bread crumbs, grate a little lemon rind and a very small quantity of nutmeg over, and pepper and salt; stir these well through the crumbs, etc. on the paper; break an egg on to a plate, blend it with the knife; dip the cutlet in, covering it thoroughly with the egg. Toss in the contents of the paper and fry in boiling fat, see page 11. Cost, veal, 1s. per lb.

5. **Fritters of Cold Meat.**—*Ingredients*—Cold meat, fowl, goose, pigeon or rabbit, flour, oil or butter, shallot, sweet herbs, egg. *Utensils*—Plate, two basins, knife, wooden spoon, frying-pan, kitchen paper.

Cut the meat into neat slices, or the fowl, etc., into joints. Chop a shallot very finely, also sweet herbs enough to fill a teaspoon when minced. Put in a basin two tablespoonfuls of flour, one tablespoonful of oil or 1 oz. of butter oiled, *i.e.* melted over the fire or in the oven, but not frothed. Break an egg, allowing the white to drop into a clean basin, and putting the yolk into the basin with the flour, mix to a batter with warm water till it is a little thicker than Yorkshire pudding batter. Mix in the minced herbs, season with pepper and salt. Whip the white of egg to a stiff froth, stir it gently in, and mix well with the batter, dip in the pieces of meat and fry in boiling fat (page 11). Make a good brown gravy to send to table in a sauce tureen with the fritters. When the fritters are cooked, pile on a clean hot napkin and send to table very hot. Cost of batter $3\frac{1}{2}$d. or 4d., enough to fry a whole rabbit.

6. **Green-gooseberry Pudding.**—*Ingredients*—Gooseberries, suet, flour, sugar, Freeman's Egg Powder, (nutmeg if liked). *Utensils*—Old scissors, two basins, wooden spoon, jug of water.

Mince $\frac{1}{4}$ lb. of mutton suet quite finely. Clip 1 pint of gooseberries. Put into a basin $\frac{3}{4}$ lb. of flour, add the suet and one teaspoonful of Freeman's Egg Powder, mix to a dough with water, add the gooseberries and two tablespoonfuls of sugar. Grease a basin, pour in the batter, cover with a greased paper cap, and steam for $1\frac{1}{2}$ hours; see page 8.

7. **German Potatoes.**—*Ingredients*—Potatoes, shallot or onion, sage, egg, dripping, pepper, salt. *Utensils*—Basin, saucepan, frying-pan, potato masher or wire sieve.

Peel, boil, and mash 1 lb. of potatoes, chop finely a shallot, dry and rub fine or mince some sage leaves; half a teaspoonful will be enough. Mix these with the potatoes. Break an egg into a basin; if good, beat it up amongst the potatoes; season with pepper and salt. Put the frying-pan over the fire with 2 oz. of good dripping. When it boils, put in the potato, stir it up with the boiling fat, let it become thoroughly hot. Serve on toast. Cold potatoes thus dressed are delicious either sliced or mashed. Cost 3d., enough for four people.

8. **Watercress Butter.**—*Ingredients*—Butter, watercress. *Utensils*—Chopping-board, knife, coarse towel, basin, wooden spoon, hair or fine wire sieve or butter pats, butter dish.

Wash one bunch of watercress in vinegar and water, with a teaspoonful of salt in it; pinch off all the leaves, chop them very fine, wring out the juice in the corner of the towel till it is very dry, take the knife, and thoroughly mix it with 2 oz. of butter. Invert a wire sieve over a glass butter-dish or plate, and with a wooden spoon press the butter through, keeping it well in the middle of the sieve so that it may form a pile in the centre of the dish. Cost 3d. This is sent to table with the cheese, and forms an excellent relish, or it is used as a garnish in conjunction with others for salads and cold dishes, as mayonaise of salmon, and for butter piping.

9. Summer Beverage.—*Ingredients*—Cranberries, lemon, oatmeal, sugar. *Utensils*—Large basin, teacup, hair sieve, potato-masher or wooden spoon.

Put the cranberries into a basin, mash them, peel the lemon very finely so as to take none of the white rind; express the juice into a teacup, take out the seeds, fill the cup up with cold water and pour the whole over the cranberries; stir it well up with a wooden spoon, and leave for an hour or two so that the lemon flavour may be absorbed by the water. Put over the fire in an enamelled saucepan 3 pints of water, let it boil; stir in a tablespoonful of oatmeal, let boil ten minutes, then pour over the cranberries, etc.; put aside till cool, strain, sweeten, and it is fit for use.

CHAPTER VII.

FOODS FOR JUNE, WITH ONE MENU, AND LESSON ON PRESERVING.

Vegetables.—Artichokes, asparagus, French scarlet runners and broad beans, cabbage, carrots, cauliflower, cucumbers, endive, herbs, leeks, lettuce, onions, pease, potatoes, salad condiments, spinach, turnips, vegetable marrow, etc.

Fruits.—Apples, apricots, cherries, currants, gooseberries, melons, strawberries, etc.

Meats, *Poultry*, *etc.*—Beef, mutton, veal, lamb, buck venison, chicken, ducklings, fowls, leverets, pigeons, plovers, marrots, wheat ears, etc.

Fish.—Carp, cod, conger eel, crabs, crayfish, etc., as in May.

Lesson XI.

1. **Milk Soup.**—*Ingredients*—The bones of rabbits, chicken, veal, or any white meats, onion, cloves, peppercorns, mace, carrot, boiled flour, cornflour, milk, salt. *Utensils*—Saucepan, basin, knife, wooden spoon.

Place in a saucepan the bones of any white meats, rabbit or chicken, taking care there is no liver or dark meat which would discolour the soup; pour over 3 pints of milk and 1 of cold water. No salt is to be put in at present as it would curdle the milk; the saucepan also must be chemically clean. Put these by the side of the fire and simmer for four hours. It must not boil rapidly. Peel and slice in thin rings ½ lb. of onions,—mild Spanish are best,—and also mix in a basin one tablespoonful prepared flour (page 14), and one tablespoonful of Johnston's cornflour, moisten with a teacupful of cold milk (or cream, if you wish to make a superior soup); for ordinary purposes skim milk answers well. Now strain off the soup, put the bones on a clean plate, as they will make excellent second stock if stewed or boiled six hours longer. Wipe out the saucepan, place the onions and soup in, put over the fire and stir in the thickening; stir till it boils. Now season with salt, cloves, mace, pepper-corns, etc., boil ten minutes, and serve. A little lemon rind is a vast improvement.

2. Salmon baked à la Reine.—*Ingredients*—Salmon, suet, bread crumbs, egg, thyme, parsley, lemon peel, mushrooms, spices, sugar, second stock. *Utensils*—Large pan, knife, chopping-board, basin, bread-grater, wooden spoon, baking dish.

Mince 2 oz. of mutton suet very fine, also enough thyme, parsley, and lemon peel to fill a tablespoon; put all this into a basin, add 3 oz. of fine bread crumbs, pepper, salt, and any spice that is liked. Break an egg into a cup, and if good, work the crumbs, etc. into a paste with a spoon; next clean the fish, stuff it, curl it round in a deep baking dish, pour round it a pint of second stock, add the peelings and stems of a dozen small mushrooms, a lump of white sugar, a teaspoonful of salt, six cloves, six pepper-corns. Put into the oven and bake, basting frequently. A 5 or 6 lb. salmon will take half an hour in a smart oven. When done, lift on to a hot dish and place in the oven for a few minutes, strain and pour the gravy into a saucepan with twelve mushrooms previously peeled, and place over the fire. Let it reach boiling point, and stir in a mixture of one tablespoonful of prepared flour (page 23) and water; stir till it thickens, boil three minutes, pour round the fish, placing the mushrooms at equal distances, and garnishing with quarters of slices of lemon.

3. **Cold Salmon à la Princess.**—*Ingredients*—Salmon, bread crumbs, flour, essence of anchovy, milk, egg, egg powder, pepper, salt, nutmeg. *Utensils*—Chopping-board, knife, grater or wire sieve, two basins, cup, wooden spoon, kitchen paper.

Pick 1 lb. of cold salmon (or any fish) off the bones, chop it up very fine, put it into a basin with 3 oz. of bread crumbs, 2 oz. of flour, ½ teaspoonful of egg powder, ½ teaspoonful pepper and salt, a little grate of nutmeg. Mix these well together with a spoon; break an egg into a cup, and add also as much milk as will make it into a light doughy mass. Grease a basin or mould, pour it in and cover with a greased paper, steam for 1¼ hours. Serve with melted butter (page 14) flavoured with anchovy sauce or essence.

4. **Rabbit à la Jardinière.**—*Ingredients*—Rabbit, second stock or water, onion, carrots, turnips, cauliflower, pease, French beans, flour, milk, cornflour, spices, egg. *Utensils*—Three or four teacups, saucepans, knife, a halfpenny whistle cut in two portions, or pea-shooter, or round vegetable cutter, spoon, wire sieve, large plate, and meat dish.

Clean and truss the rabbit so that it will sit nicely on a large meat dish, put it into a long saucepan or stewpan, cover with second stock or water, peel and throw in a couple of onions, six pepper-corns, six cloves, a dessertspoonful of salt, also a bunch of sweet herbs; put it near the fire, and stew for 1½ hours. Next prepare the vegetables, equal quantities of each. (I have found, for large schools and classes, tin pea-shooters or small whistles cut in two or three pieces make excellent vegetable cutters. They cost about

2s. 3d. per gross, or ½d. each.) Clean the carrots, see that they are a deep red. Cut them about 1 in. long, and stamp out little rolls with the vegetable cutter, using the narrow end. Then throw them at once into cold water in a tea-cup. Prepare the turnip in a similar way, putting it into a separate cup. Boil the carrot first in salt and water for a quarter of an hour, strain and lay on a plate; next boil the turnip for five minutes, strain and lay beside the carrot. Pick sprigs of cauliflower. Boil as the others. Next boil separately the pease and the beans (cut into lozenge-shaped squares) as directed at page 13 for cabbage, and lay on the plate. When they are all ready, the pea shells and refuse of carrot and turnip must be put in with the rabbit and more water added to keep it covered if necessary. Boil an egg half an hour, and plunge at once into cold water; when cold, peel, chop the white, and place it in a cup of cold water. When the rabbit is done, lift it out on to a plate, and have ready melted butter prepared as at page 14, with the addition of one tablespoonful of Johnston's cornflour to make it thicker; stir in also the chopped egg after draining off the water; when cooked, cover the rabbit entirely with it. Bruise the yolk of the boiled egg through a wire or hair sieve so as to cover with the yellow flakes. Set the rabbit carefully on a large dish, mix the vegetables and arrange round it. Strain ½ pint of the gravy in which it was boiled, and pour boiling over the vegetables; it must on no account touch the top of the rabbit, only the vegetables round it. Serve at once. Cost 1s. 9d., enough for four or six persons. Fowl, neck of lamb, pigeons, etc., dressed in this manner, may be sent to table either hot or cold.

5. **Summer Salad.**—*Ingredients*—Lettuce, blanched dandelion leaves, wood sorrel, watercress, mustard,

garden cress, nasturtium leaves, onion, garlic or shallot, etc. Lemon, two eggs hard boiled for quarter of an hour, beetroot. Dressing—Raw egg, oil, cream, vinegar, salt, cayenne. *Utensils*—Basin of water, clean towel, chopping-board, knife, salad bowl, small basin, wooden spoon.

All or a selection of the above ingredients may be used. Wash, drain, and carefully wipe the salad, taking care not to bruise the tender leaves and stalks. (*N.B.*—The *chefs* most celebrated on the Continent for salad making have the salad ingredients cut soon after dawn in the summer, and never wash them, simply wipe them. They are kept in a cool place till wanted, where they are away from the heat and rays of the sun.) Cut the salad leaves in stripes, not too fine; chop the white of two hard-boiled eggs, press the yolk through a wire sieve on to a clean plate. Slice the beetroot, and cut with fluted cutter or in fancy patterns if liked, also halve the lemon. If garlic is used, rub the bowl round with it; if onion or shallot, mince a *very little* as fine as possible and mix with the salad; pile up the vegetables high, surmounting with delicate cress, wood sorrel, etc.; dust over with the yolk flakes from a knife point, decorate with beetroot, lemon, etc. to taste. Mayonaise sauce for dressing. Take the yolk of a raw egg, put it into a basin (the white will be useful for a tart or pudding), also a tablespoonful of good cream; blend the two together, stirring all one way. Take good salad oil and drop in, *one drop at a time*, about a tablespoonful, stirring regularly and gently the whole time; next add a dessertspoonful of vinegar in the same way; season with salt and cayenne, or a simple preparation of the yolk of a hard-boiled egg, a tablespoonful of cream, two of vinegar, one of sugar, a little salt and cayenne or white pepper. These dressings must be served separately or poured round the salad just as it is going to the table. The addition of cold meat, fish, or fowl is always advisable, and renders it a nice luncheon or supper dish.

6. **Fruit Tart.**—*Ingredients*—Fruit, sugar, white of egg. (*a*) Superior paste: Ingredients—Patent flour (self-raising), lard, sugar, butter. (*b*) Common paste: Lard or dripping, flour, Freeman's Egg Powder. *Utensils*—Pasteboard, rolling-pin, knife, paste brush, wing or feather, pie-dish.

Fill the pie-dish with fruit, but put no sugar with it. It is always best to add it after, as chemically much of its sweetness is lost in baking. Confectioners add it after taking out of the oven in the form of syrup. Paste (*a*) is made by rubbing ¼ lb. of butter into 1 lb. of flour; then, making it into a paste with a little water, roll it out evenly and spread over the surface ¼ lb. of lard, dust over with self-raising flour the same as the paste is made of, double in three folds and roll out twice more, the last time let it be to the required thickness of the cover. Grease the edges of the dish, lay thin stripes of paste round, wet these with the paste brush, lay on the cover, trim with a sharp knife, brush over with white of egg, dust with powdered lump sugar, bake for half an hour. (*b*) Rub 2 oz. of lard or dripping into ½ lb. of flour mixed with egg powder, make into a paste, roll out, spread 2 oz. more over the surface, dredge with flour, roll out and add 1 oz. of fat; dusting with the flour, roll out and cover the tart. Make the paste up with a knife, as the less the fingers touch it the better; one tablespoonful of milk and one tablespoonful of sugar brushed over forms an excellent common glaze. Add syrup of sugar and water when cooked.

7. **The Children's Pudding.**—*Ingredients*—4 oz. of

mutton suet, 6 oz. of flour, egg powder, water or milk, 1 quart of mixed fruits—rhubarb, sugar, currants, black and red, a few rasps, gooseberries, etc. *Utensils*—Basin, knife, chopping-board, scissors, pie-dish, wooden spoon.

Mix one teaspoonful of Freeman's Egg Powder with 6 oz. of flour, and form into a batter with water or skim milk; stir in the suet, and beat it well. Peel and chop up the rhubarb, clip the gooseberries and strip the currants, mix all with the batter. Grease a large pie-dish, pour it in, bake one hour. Strew moist sugar over when serving. Cost 4½d., enough for six or eight children.

LESSON XII.

PRESERVING.

It is not generally known that fruit, especially in wet seasons, will be all the better in colour and quality if boiled for an hour before adding the sugar. Rhubarb, strawberries, red currants, blackberries, vegetable marrows, rasps, etc. are always so treated by the large manufacturers of jams. Again, in some of the large wholesale factories, they never cover down their jams or marmalades till sent out to the retail dealers. They thus keep perfectly good. The pots or jars are examined once a month, and if any sign of decay, fermentation, or mould is observed they are at once removed, the preserve re-boiled, the jar scalded, dried in a hot oven, filled and sent into store again.

Gather the fruit in dry weather, and after the sun has been on it; pick and weigh it before putting into the preserving pan.

1. **Rhubarb Marmalade.**—*Ingredients*—Rhubarb, oranges, loaf sugar. Weigh and then peel twelve

oranges very thinly, taking care there is no white pellicle. Slice the fruit on a plate after peeling off all the white substance, pick out the seeds. Peel and cut into inch lengths 12 lbs. of rhubarb. Put the whole into a preserving pan; boil for one hour, stirring from time to time, and skimming after it has boiled twenty minutes. Add 1 lb. of loaf sugar for every 1 lb. of fruit, boil half an hour, put into dry pots and store in a dark, *dry* cupboard when cool.

2. **To Preserve Red, Black, or White Currants, Rasps, Strawberries, etc.**—Pick and weigh them, then boil from three-quarters of an hour to an hour (strawberries really require the hour); skim well, add $\frac{3}{4}$ lbs. of good Demerara or best loaf sugar to each 1 lb. of fruit, boil till it is thick, about half an hour or more if necessary; fill the jars, and store.

3. **Stone Fruits—Cherries, Plums, Damsons, etc.**—The fruit ought properly to be weighed and then stoned, and one quarter of the stones cracked and added to the jam. Then boil the fruit for an hour without sugar, skimming carefully as above directed; add the sugar in the proportion of $\frac{3}{4}$ lb. to every 1 lb. of fruit. Boil till quite thick, put into pots. If the cupboard or store-room is damp, it is best to cover with brown paper when the jam is cool. Plum and apple, plum and blackberry, apple and blackberry, apple and rasps, make nice mixtures for family use.

4. **Scotch Marmalade.**—Twelve Seville oranges and double their weight in sugar. Cut a ring round the rinds, insert dessert spoon and work it off. Cut each hemisphere of rind into half, remove some of the white spongy substance, and slice into delicate strips. Slice the pulp into thin rings and quarter them,

removing the pips. Place the whole in a large pan or basin. For every 1 lb. of fruit add 1 qt. of boiling water. Let it stand eighteen hours, then boil in a preserving pan till the chips are tender, add the loaf sugar by degrees, stirring the whole time. After putting in the sugar, boil for about three-quarters of an hour until it is thick and *drapes* from the spoon. During the last quarter of an hour skim well if needed.

5. **To Preserve Apricots, Large Strawberries, etc. whole.**—Peel the apricots, peaches, or plums—this is not required with strawberries; weigh them and place them in an earthenware jar. Put their weight of sugar into a preserving pan, and make a syrup by putting ½ pint boiling water for each 1 lb. of lump sugar. Boil till it is a clear yellowish colour and thick, pour this over the fruit, quite cover it with syrup, let it stand twenty-four hours, then carefully strain off all the syrup; boil till it is again thick and the water extracted from the fruit evaporated. Repeat this operation three times; when cold, tie down with bladder and store for six months. Strawberries, oranges, and lemons, with devices cut on the rind, are also prepared in this manner.

6. **To Crystallize Fruit—Cucumbers, Cherries, and Strawberries.**—Tie the fruit by the stalks, and dip into boiling syrup. Hang it up to drip. Repeat this three or four times, then put very finely powdered lump sugar into a castor and dust the fruit several times with a thick coating of the sugar, hanging it after each dusting in a warm, dry place to become firm. When the sugar has formed a cake on the fruit, lay the fruit on a white paper and put in a very cool oven to dry. Store in boxes, with layers of note paper between.

7. **Jelly.**—Red or black currant, raspberry, blackberry, in fact any ripe-fruit jelly is made by bruising the fruit in an earthen pan with a wooden or silver spoon, and straining the juice through a tammy sieve or jelly bag. Measure the quantity expressed, put it into a preserving pan, boil for half an hour, then add $\frac{3}{4}$ lb. of sugar for every pint of fruit juice. Boil for three-quarters of an hour, skimming during the last quarter of an hour, pour into little cups, moulds, or broken wine glasses, etc., and when set, store.

8. **Turnip Marmalade.**—Peel, slice, and boil in salt and water 4 lbs. of Swede turnip; when tender, take out of the water and mash through a wire sieve. Prepare six oranges and continue as in rhubarb (page 57), using the turnip instead of the rhubarb, and coarse sugar instead of loaf.

CHAPTER VIII.

FOODS FOR JULY, ONE MENU, AND LESSONS IN PICKLING.

Vegetables.—Same as in June, with celery and salsify.

Fruits.—Apples, apricots, cherries, currants, damsons, bilberries, sloes, gooseberries, melons, nectarines, peaches, pears, pine-apples, plums, etc.

Meats, *Poultry*, *etc.*—As in June.

Fish.—Barbel, brill, carp, cod, conger eel, crabs, dace, dory, eels, flounders, gurnets, haddocks, herring, ling, lobsters, mackerel, mullet, perch, pike, plaice, prawns, salmon, skate, soles, tench, thornback, trout, etc.

LESSON XIII.

1. Turtle Soup.—*Ingredients*—Dried turtle, good stock, sherry. *Utensils*—Large pan or basin, stock pot or saucepan.

Prepare a good stock as in page 23. Take 1 lb. of dried turtle; soak in cold water for three or four days, changing the water each day. It is then very much swollen, and is just like freshly-killed turtle; cut it into neat squares of about an inch, put this into a stewpan with 4 quarts of strained stock, stew eight hours. This will make 3 quarts of good soup. When dishing up, put into the tureen two glasses of cooking sherry. Cost 12s., enough for twelve people.

2. Green Pea Soup.—*Ingredients*—Freshly-gathered

green pease, stock, onion, milk, sugar, salt, pepper-corns, carbonate of soda. *Utensils*—Saucepan, basin, wire sieve, wooden spoon.

Place in a saucepan over the fire 3 pints of good, well-flavoured, strained stock made from bones (a ham bone is a great addition in making stock, if mixed with fresh meats or bones). When it boils, put with it 1 quart of shelled pease, a lump of sugar, and ¼ spoonful of carbonate of soda, small onions, three pepper-corns, salt to taste. Boil ten minutes with the lid off, or until the pease are tender, mash them through a wire sieve into a clean basin; when all the soup has passed through, return to the saucepan, warm it up, add a teacupful of milk or cream, and serve at once. This method abolishes the use of spinach and bottle-green colouring, as the pease will be a charming colour Cost 6d., exclusive of stock, enough for six or eight people.

3. Fried Skate.—*Ingredients*—Skate, flour, dripping, egg, bread crumbs. *Utensils*—Bread-grater or wire sieve, plate, knife, frying-pan, kitchen paper.

Skin the skate, and soak in salt and water for three or four hours, cut into narrow strips, boil in salt and water a quarter of an hour for the thickest portions. When done, lift on to a plate. Make some fine bread crumbs, break an egg on a plate, beat up a little with a knife, flour the pieces of skate, dip in the egg, toss in the bread crumbs, and fry in boiling fat. Cost 4d. to 6d. per lb.

4. Sausage Pudding. — *Ingredients* — ½ lb. beef sausages, flour, suet, water, onion, baking powder. *Utensils* — Pasteboard, rolling-pin, knife, two basins, kitchen paper.

Mince 2 oz. of suet, put it into a basin with 1 lb. of flour and a teaspoonful of baking powder, mix well together, moisten with water till it is a firm dough. Roll out lightly till very thin, cut into rings the size of a pint basin inverted over it. Grease the basin and lay one ring of paste in the bottom, peel an onion and lay one slice on the paste. Cut down the skin of a sausage, take out the meat and lay over the surface of the paste, add one tablespoonful of water, repeat this till the sausages are used, finish by a top layer of paste. Cover with greased paper, steam one hour. Cost 6d. to 8d., enough for four people.

5. **Asparagus to Cook.**—Asparagus is tied in bundles trimmed to an equal length and about six stalks in each little bundle. They are packed standing upright in a saucepan containing boiling water, a teaspoonful of salt, ½ teaspoonful of carbonate of soda, and one lump of sugar. The tender heads are just left half an inch out of the water. Asparagus is served on thin buttered toast, with melted butter over, see page 14, or *au naturel*, *i.e.* without toast or sauce. **Asparagus pease** are the green parts of the stalks cut into little lengths to resemble peas, in which case the water is prepared as above and the tops or tender parts kept back until the stronger fibres have boiled three minutes.

6. **Devonshire Junket.**—*Ingredients*—Milk, cream, rennet, sugar, cinnamon. *Utensil*—Saucepan.

Put a quart of new milk into a thoroughly clean, shallow saucepan or stewpan. Throw in a tablespoonful of rennet. When it comes to the boil, lift it off the fire, and pour into a glass dish, taking care not to break the curd; when cold, add scalded or clotted cream. Shake powdered cinnamon over the top.

7. **Fruit Moulds.**—Strawberries 1 lb., rasps ½ pint.

Pick, mash, and boil together for ten minutes. Whilst it is boiling, put in a basin two tablespoonfuls of Johnston's cornflour, and two tablespoonfuls of moist sugar. Moisten with half a teacupful of water, pour this in amongst the fruit, stir rapidly for a few minutes till it thickens, boil three minutes, rinse a mould in cold water and pour the mixture in; when cold, turn out. If the colour is not brilliant enough, just before putting into the mould add three or four drops of cochineal. Plums, apples, and rhubarb dressed in this manner are excellent, or soaked sago may be substituted for the cornflour, and any spices added that may be fancied, as nutmeg, ginger, cinnamon, allspice, etc., and eaten with one of Freeman's delicious and non-injurious custard powder preparations.

8. **American Spruce Beer.**—Place in a pan 6 lbs. lump sugar, pour on this 1½ gals. boiling water; when a little cool and the sugar dissolved, add ¼ lb. of essence of spruce. Stir in ½ pint of yeast, and bottle at once.

LESSON XIV.

1. **To Pickle Walnuts.**—Take 200 green pickling walnuts, prick them with a fine skewer or large darning needle, lay them in brine for nine days, stirring them at least once a day. Then lift them out into the sun, or before the fire, on an old tray for a few hours. Put them in jars when quite black and dry. Prepare the following pickle:—2 quarts good strong vinegar, put into a saucepan with 1 oz. cloves, ½ oz. bruised ginger, 1 oz. whole black pepper, 1 shallot; place over the fire, and let it boil a quarter of an hour. When cold, pour over the walnuts. Tie down with strong brown paper and store for four months.

2. **Pickled Eggs.**—When ready for table, the eggs taste like and resemble pickled walnuts. They are a most delicious pickle. Boil one dozen eggs for one hour. Shell them, quarter them, and lay in an earthen jar. Boil for half an hour 1 quart of good vinegar with 1 oz. of cloves, six shallots, 1 oz. whole pepper, ½ oz. mustard seed, one tablespoonful moist sugar; pour this, boiling, over the eggs. When cold, tie down and store for a month. Jews are very partial to this pickle, and it is a feature at the Dutch Kermess, where, by the way, the eggs are pickled whole.

3. **Digestive Mixed Pickle.**—Take one doz. apples, quarter them, using a silver-plated knife if possible (one of Neal's (Edgeware Road) pyro-silver knives would be a cheap, useful investment in a good kitchen), one or two heads of cauliflower broken into sprays, 2 lbs. of French or young kidney beans cut into inch lengths, 1 lb. of carrots, and 2 lbs. of vegetable marrow after being peeled and the seeds extracted, 1 lb. onions peeled and sliced. Boil the whole in water with ¼ lb. of salt for a quarter of an hour, then drain on a wire sieve and put into a large jar. Boil vinegar and spices as in No. 2, mix them thoroughly with the pickle, and see that there is enough to cover it. Let it stand till next day; add more vinegar, and tie up. It will be ready in a week.

4. **Pickled Onions.**—Small silver onions are the best for pickling. Peel them, holding the root uppermost (or under water), and they will not affect the eyes. As they are peeled, throw them into brine, strong enough to float an egg, made with salt and boiling water. Let them stay in that twenty-four hours, then put them into jars with slices of horse-radish or chillies between. Prepare vinegar as in No. 2, and when cold pour over.

CHAPTER IX.

FOODS FOR AUGUST, ONE MENU, AND LESSON ON CAKES.

Vegetables.—As in July.

Fruits.—As in July, with mulberries and arbutus berries, etc.

Meats, *Poultry*, *etc.*—As in July, with grouse, moor game, wild ducks, etc.

Fish.—As in July, with oysters, turbot, and pike in perfection.

LESSON XV.

1. **Tomato Soup.**—*Ingredients*—Open a large tin of tomatoes or take one doz. ripe fruit, beef stock, mace, cloves, chillies, salt, vinegar, sugar, thyme, onion. *Utensils*—Saucepan, knife, hair sieve, wooden spoon, large basin.

Put the tomatoes into a saucepan with 3 pints of good, well-flavoured stock; add an onion peeled and sliced, also a blade of mace, six cloves, three chillies, a tablespoonful of vinegar, a teaspoonful of sugar, and a few leaves of thyme. Boil half an hour, strain and pulp the tomatoes through a wire sieve. Return the soup to the pot, let it boil, and throw in a few Italian paste stars, or 2 oz. of crushed vermicelli. Cost 2s., enough for eight persons.

2. **Baked Pike.**—Prepare as salmon at page 52, only do not curl the fish round. If too large for

family use, the head and shoulders may be baked, the middle cut stewed as at page 42, and the tail piece marinaded as at page 20.

3. Mackerel to Broil.—*Ingredients*—Butter, mackerel, pepper, salt, parsley, lemon, cayenne, flour. *Utensils* — Basin, knife, chopping - board, gridiron, chalk.

Take off the head of the mackerel, split it open by cutting down the back. Clean it out; do not wet it, but wipe dry with a clean cloth that has been tightly wrung after being dipped in very hot water. Squeeze a few drops of lemon over the thick part of the inside of the fish, dust a little pepper, cayenne, and salt over. Rub the bars of the gridiron with chalk, make it very hot, place the fish skin downwards on it and broil ten minutes. When the fish looks quite white it is done. Draw off carefully on to a hot dish so as none of the juice or gravy on the top may be lost. Strew chopped parsley over, add ¼ oz. of butter, and serve. Cost 4d. or 5d., enough for two persons.

4. Vegetable Marrow Pie.—*Ingredients*—Marrow, flour, dripping, cold meat, pepper, salt, nutmeg, onion, herbs. *Utensils*—Knife, pie-dish, pasteboard, rolling-pin.

Make a common crust in the proportions at page 22. Peel, take out the seeds, and cut the marrow in neat slices. Peel and slice an onion, mince some sweet herbs, as thyme, parsley, marjoram, etc.; put a layer of marrow in the pie-dish, strew some herbs over and a little onion, lay in slices of meat, dust a little pepper and salt over. Next lay marrow, then herbs, meat. onion, etc., and repeat until the pie-dish is full. The juice of the marrow will make enough gravy without adding stock or water. Cover the pie with the paste, ornament, brush over with milk, and bake for three-quarters of an hour. Cost 4d., exclusive of meat.

5. **Salsify to Dress.**—This delicious root tastes very similar to an oyster when dressed, and is largely used in the manufacture of oyster patties. (*a*) Scrape the salsify roots, wash, cut in slices, and boil in salt and water till tender, so that it will mash easily, season with pepper. Prepare batter as at page 48, dip the pieces in and fry at once in boiling fat. (*b*) Wash and scrape as above, cut in pieces and put into a stewpan with fish stock, six cloves, a blade of mace, pepper, salt, and a shallot. Prepare some toast; when the salsify is tender lift on to the toast. Strain the liquor, put it back into the saucepan and set over the fire. Mix a tablespoonful of prepared flour (page 14) with a little milk. When the liquor boils pour this in, stir till thick, add ¼ oz. of butter, and pour over the vegetable, which should have been kept hot. To make a very rich dish the yolks of one or two eggs are generally added to the sauce after thickening. (*c*) For patties make the same as oyster.

6. **Piquante Cowheel.**—*Ingredients*—Cowheel, bread crumbs, onion, vinegar, mustard, pepper, salt, herbs. *Utensils*—Knife, saucepan, pie-dish.

Take a hind ox foot, clean and stew well in 4 quarts of cold water without salt for six or eight hours,—the longer the better. Skim off and carefully save the oil, it is very useful. The liquor, if carefully cleared from scum and oil, will make nice jelly when strained off the feet, or delicious soups. Cut off all the meat, have ready 6 oz. of bread crumbs, or 6 oz. of crusts soaked in water and squeezed dry. Put a layer of meat in a deep, large pie-dish, then soaked bread or bread crumbs, etc., chopped onion and herbs, then meat, etc., in alternate rows till the dish is full, ending with a good cover of bread. Mix in a basin one teacupful of the liquor in which the foot has been boiled, with two tablespoonfuls of vinegar, a teaspoonful of newly-made mustard, pepper, and salt. When thoroughly mixed, pour over the top, put into the oven to warm and brown. Can be used hot or cold. Cost 1s., enough for eight people.

7. **Syllabub.**—*Ingredients*—Sherry, sugar, nutmeg, milk. *Utensils*—Saucepan, deep glass dish or bowl, two jugs.

Put into a saucepan 1 quart of new milk, let it get to blood-heat. Put into a jug a glass of sherry, a tablespoonful of powdered lump sugar, and a little grated nutmeg; pour the milk quickly into the jug, then rapidly from one jug to the other till it froths, then into a deep glass dish or bowl.

8. **Peppermint Cordial.**—Make a syrup as at page 59. Add 2d. worth of essence of peppermint, or six drops of oil of peppermint. Bottle, and use with cold or hot water as a beverage. Cost 6d. for 1½ pints.

Lesson XVI.

CAKES.

1. **Plain Tea Cake.**—*Ingredients*—Three cupfuls of flour, one egg, carbonate of soda, cream of tartar, milk, sugar. *Utensils*—Basin, teaspoon, cup, wooden spoon, baking tin.

Mix well with the flour in a basin one teaspoonful of carbonate of soda, and one teaspoonful of cream of tartar (one of Freeman's Egg Powders will answer as well), one tablespoonful of sugar. Drop into the flour one egg, add milk, and stir by degrees to a stiff batter.

Bake in a greased mould or tin for twenty minutes or half an hour. Cost 3d. To be cut in rings and buttered whilst hot.

2. **Cornflour Cakes.**—*Ingredients*—Johnston's cornflour, sugar, butter, two eggs, baking powder. *Utensils*—Basins, wooden spoon, small patty pans or cake tin.

Put into a basin ¼ lb. cooking butter; with a wooden spoon beat it to a cream. Add ¼ lb. finely-crushed lump sugar, the yolks of two eggs, the whites being put into a clean dry basin and whipped to a stiff froth just before using. Take ½ lb. packet of cornflour, mix with it a heaped teaspoonful of baking powder, and then work the whole in with the sugar, butter, etc. Stir in the white of egg last. If properly worked, it will require no water unless the eggs are very tiny. Pour into tins, half fill them, and bake from ten to fifteen minutes in a smart oven. Lemon, almond, or other flavouring is an improvement.

3. **Rice Cakes.**—Proceed as above, using ground rice instead of cornflour.

4. **Shortbread.** — *Ingredients* — Butter (or, if for children, dripping), candied peel, sugar, eggs. *Utensils* —Basin, knife, baking sheets.

Rub 1 lb. of butter into 2 lbs. of flour, rub in also ¾ lb. of powdered sugar, make into a stiff paste with an egg or two, roll out ½ inch thick, cut into squares, pinch the edge, decorate with candied peel, and bake in a brisk oven.

5. **Plain Cake.**—*Ingredients*—6 oz. rice, 6 oz. flour, milk, a half packet egg powder (Freeman's is quite harmless and cheapest), ½ lb. moist sugar, ¼ lb. dripping.

Rub the dripping and sugar into the flour and rice, mix the egg powder well with these, moisten with sour milk or water to a moist dough, bake one and a half hours. Let the oven be brisk at first. Cost, 7d. ½ lb. currants or sultanas may be added, or ½ oz. carraway seeds. This cake is better when two days old.

6. **Oatmeal Gingerbread.**—*Ingredients*—Treacle, one egg, ¼ lb. moist sugar, oatmeal, ½ oz. allspice, 2 oz. powdered ginger, 2 oz. or 4 oz. dripping. Rub the dripping into 1½ lbs. oatmeal. Mix in the sugar, next the ginger, thoroughly mixing the latter with the meal, etc. Add treacle enough to make it into a stiff dough, add an egg or not at pleasure. Use a little flour to roll into a flat paste one inch thick, cut into squares, and bake thirty-five minutes in a hot oven. Cost 6d., enough for twenty-six cakes.

7. **Rich Seedcake.**—1 lb. butter, well creamed, 1 lb. crushed and sifted lump-sugar, beaten in after creaming the butter by beating with a wooden spoon, the yolks of three eggs, 1¼ lbs. self-raising flour, sifted in lightly. Beat the whole for ten minutes by the clock, then whip the whites to a very stiff froth, mix with the batter thoroughly, pour into a hot buttered tin, tie a band of paper round; only half fill the tin. Bake one and a half hours, and cool the cake on a sieve.

CHAPTER X.

FOODS FOR SEPTEMBER, ONE MENU, AND LESSON ON SAUCES.

Vegetables.—Jerusalem artichokes, beans, cabbage, carrots, cauliflowers, celery, cucumbers, endive, leeks, lettuce, mushrooms, onions, pease, potatoes, radishes, shallots, turnips.

Fruits.—Apples, cherries, figs, filberts, damsons, hazel nuts, medlars, peaches, pears, pine-apples, plums, quinces, walnuts.

Meats, *Poultry*, *etc.*—Beef, mutton, veal, venison, hares, partridge, etc., as in August.

Fish.—As in August.

LESSON XVII.

1. **Hare Soup.**—*Ingredients*—Second stock, remains of cold roast hare, bread crumbs, egg, browned flour, onions, carrot, turnip, celery, sweet herbs, one slice of smoked bacon or ham, sugar. *Utensils*—Knife, chopping-board, saucepan.

Pick off the meat from some of the bones and lay it at one side. Cover the remains of the hare with 2 quarts second stock, add six cloves, a bunch of sweet herbs, slice of bacon, two carrots sliced, one turnip sliced, four onions, half head of celery minced. Stew four hours. Strain and pulp the vegetables through a wire sieve, return to the saucepan. Have ready sixteen or twenty little forcemeat balls made of the bacon, cold hare, sweet herbs, and quarter onion minced very finely, mixed with two oz. of bread crumbs and moistened with a little egg. Form into balls as large as marbles, rolling in prepared flour (page 22), and put into the boiling soup. Make a thickening of two tablespoonfuls of the same flour, and stir in after the balls have boiled ten minutes.

2. **Curried Fish.**—Stew the fish you wish to curry (cod is very nice dressed this way) as at page 42. Strain off the liquor when the fish is cooked, put in one tablespoonful prepared flour (page 22) and one tablespoonful good curry powder. If liked very hot, a little cayenne may be added; moisten with a little milk, put strained gravy on the fire. When it boils add the curry; a tart apple roasted, mashed, and stirred in, and a few drops of lemon juice added, make it perfectly delicious. Plain boiled rice may be served with it. Wash ½ lb. rice in a hair or wire sieve. Have a large saucepan with plenty of boiling water and some salt in it, put in the rice and let it boil as *rapidly as possible* for twenty-three minutes, drain at once, dry on a wire sieve in front of the fire, stirring with a fork frequently. Every grain will be separate by thus treating.

3. **Veal à l'Empress.**—*Ingredients*—Veal, oysters, sweetbreads, mushrooms, spices, herbs, shallot, lean ham, fat bacon. *Utensils*—Larding needle, knife, stewpan, pie-dish.

Cut lean veal into six thin stripes, three inches wide and five or six long. Mince 2 oz. of lean ham, a shallot, also marjoram, parsley, thyme, and two button mushrooms. Season with pepper and cayenne. Lard two inches of each strip of veal with fat bacon. This is done by cutting it into thin stripes one inch long and $\frac{1}{10}$th of an inch wide; they are fixed in the meat by means of a larding needle. Lay the meat in rows, the larded side down and next the right hand. Put a row of mince-meat at the left hand end of each strip, roll it up so that the larded end is out, tie round with twine, grease a pie-dish, and put them into the oven to bake from half to three-quarters of an hour. Open a tin of oysters, pour the liquor into a basin. Cut two throat sweetbreads that have soaked in salt and water one hour into dice. Put into a stewpan with one doz. button mushrooms and the liquor from the oysters, also 1 pint of good stock. Stew for one hour, then lay the oysters in for three minutes whilst you dish the olives. Thicken the sauce with a tablespoonful of prepared flour, and pour over the olives. Garnish with lemon.

4. **Australian Meat or Cold Meat, to dress.**—Cut the meat in slices, half fill a pie-dish, sprinkling pepper, salt, and chopped onion between. Make a batter by mixing three tablespoonfuls of flour with one egg and a cupful of milk, season with salt, pour over the meat. Bake in a slow oven one and a half hours.

5. **Potato Salad.**—Cold potatoes sliced, beetroot, and hard-boiled eggs, also a parboiled onion, or if preferred, mixed pickle. Mix well together, pour over half a teacupful of vinegar with a teaspoonful of sugar dissolved in it, one teaspoonful of ready-made mustard, pepper, and a little salt.

6. **To dress Onions for Table.**—Steep them in strong brine for two hours previous to cooking; then boil in the usual way and serve *au blanc, i.e.* with melted butter (page 15), or with good stock thickened with browned flour. When in the latter style, they are *à la reine.*

7. **Blackberry Pudding.**—Make a paste as at page 56. Grease a basin, line it and fill with blackberries, add six damsons or two plums, wet the edges of the paste cover, tie in a cloth and boil for one and a half hours; sugar added when serving is the most economical.

8. **American Corn Cakes.**—1½ pint Indian meal, one teaspoonful sugar, one do. egg powder. Mix to a dough, roll out, bake on a girdle, cut open, butter, and eat hot.

Lesson XVIII.

1. **Melted Butter.**—See page 14.

2. **Egg Sauce.**—Boil two or three eggs for half an hour, lay them in cold water till quite cold, shell and chop them up, the yolks and white separately, mix lightly with 1 pint of melted butter sauce, season with mace or nutmeg. This sauce is sent to table with boiled meats or fish, calf's head, chicken, turkey, cod, etc.

3. **Parsley Sauce.**—Mince the parsley and wring dry in the corner of a towel; mix with melted butter for fish and white meats.

4. **Broccoli Sauce.**—Boil the sprays of broccoli or cauliflower, drain when tender, and mix with melted butter sauce.

5. **Horse Radish Sauce.**—Scrub and wash horse radish roots. Scrape the outside off, then grate 2 oz. Moisten with white wine vinegar. Mix in a cup two tablespoonfuls of cream and the yolk of one egg, stir with a wooden spoon till thick and well blended, add the grated horse radish. Eaten with roast beef or mutton.

6. **Mint Sauce.**—Two tablespoonfuls of mint leaves chopped very fine, two tablespoonfuls of sugar dissolved in one tablespoonful of warm water, two tablespoonfuls of best vinegar. Mix all together and serve.

7. **Caper Sauce.**—Capers chopped and mixed with melted butter, also one tablespoonful of vinegar added. Nasturtium seeds do as well. This is eaten with boiled mutton.

8. **Vegetable Marrow Sauce.**—Boil the marrow till tender, remove peel and seed, pass through a wire sieve, mix with melted butter. Good with roast beef, etc.

9. **Sorrel Sauce.**—2 quarts of sorrel well washed. Boil in salt and water, drain, express all the water; add two tablespoonfuls of vinegar, pepper, salt, and a tiny bit of butter. Eaten with boiled salt beef or mutton.

10. **Tomato Sauce.**—Tinned tomatoes are cheapest and best. To a half tin add 2 oz. bread crumbs. Pass the tomatoes through a hair sieve. Put into a clean saucepan with one tablespoonful of vinegar. Season with pepper and salt, add an onion or shallot, let it come to the boil, pour over the crumbs, lift out the onion, stir and serve.

11. **Walnut Ketchup.**—Fill an earthenware pan with green walnut husks, strewing handfuls of salt between each layer. Let it stand for three weeks. Strain off the liquor, pressing the pulps. Measure it, and to every quart add ½ pint vinegar, ½ oz. whole pepper, ½ oz. cloves, ½ oz. bruised ginger, and to the whole quantity 1 oz. bruised allspice, twelve shallots and twelve chillies, or a piece of horse radish. Stew for a half-hour, strain and bottle when cold. (*N.B.*—The

spices will do for pickling if stewed in vinegar for couple of hours, and then the whole poured cold on sliced red cabbage, etc.)

12. **Apple Sauce.**—1 lb. of apples peeled and cored. Put in a saucepan with 2 oz. of sugar, a little nutmeg, ½ oz. of butter, and a cupful of water. Pulp through a sieve, warm up again and serve hot with pork, goose, duck, and breast of mutton when baked or roast, and dressed with sage and onions.

13. **Green Gooseberry.**—Boil and pulp as above, it is used like apple sauce.

14. **Club Sauce for Game.**—Crushed luncheon biscuit ½ lb., ½ pint port wine poured over, nutmeg and spices, one lemon rind grated and the juice strained, 2 oz. of sugar; beat to pulp, boil and serve.

CHAPTER XI.

FOODS FOR OCTOBER, ONE MENU, WINE-MAKING, ETC.

Vegetables.—Broccoli, parsnips, spinach, truffles, etc., as in September.

Fruits.—Almonds, apples, etc., as in September.

Meats.—Poultry, pheasants, woodcocks, snipes, etc., as in September.

Fish.—As last month.

LESSON XIX.

1. Oatmeal Soup.—*Ingredients*—Oatmeal, carrot, turnip, onion, herbs, pepper, salt, sugar, dripping. *Utensils*—Knife, basin, brush, chopping-board, saucepan.

Cut ¼ lb. of carrots, ¼ lb. of turnip, into slices or dice, after being well washed and scraped or peeled, also ½ lb. of onions. Put over the fire in a saucepan with 3 pints of water and boil twenty minutes; season with pepper, salt, and a teaspoonful of sugar, and sweet herbs finely minced, as parsley, marjoram, thyme. Whilst boiling, stir in 3 oz. of coarse Scotch oatmeal. Boil for another twenty minutes, add 1 oz. of dripping, and serve.

2. Hake Pie.—Hake being plentiful and in season makes a nice pie cut in slices, floured, seasoned, and finished as for fish pie, page 35.

3. Stuffed Tripe.—*Ingredients*—Tripe, sage, onions, bread crumbs, pepper, salt, fat, bacon. *Utensils*—Chopping-board, knife, saucepan, baking dish.

Boil the tripe after bringing from the shop for twenty minutes. Have ready a stuffing of sage, chopped onions which have been parboiled, and bread crumbs (or soaked crusts with the water expressed). Season with pepper and salt. Lay a portion of this over a piece of tripe, then put a layer of bacon, roll the tripe up. Cover another piece with stuffing and roll round till it forms a nice solid roll, tie round and place in a pie-dish, sprinkle bread crumbs over and three slices of fat bacon laid on the top, bake till it is nicely browned. Make brown gravy of the liquor in which it was boiled. Season it and pour over the tripe when done. Serve hot.

4. **Oxford Dumplings.**—*Ingredients*—Bread crumbs, currants, suet, sugar, eggs, mixed spice. *Utensils*—Wire sieve, basin, chopping-board, knife, frying-pan.

Pass bread through the wire sieve first for 6 oz. of crumbs. Then wash 6 oz. of currants in the sieve under the tap, leaving them to drain. Mince 6 oz. of suet. Then put all into a basin, mix together with an egg and 3 oz. of sugar. Form into balls. Dip in egg and fry in boiling fat till a rich brown. Drain on paper. Strew over with sifted sugar. Serve very hot.

LESSON XX.

WINE-MAKING.

1. **Damson Wine.**—Mash 3 gals. of damsons with a wooden masher; take out as many of the stones as possible and crack them, returning them to the tub or pan in which the damsons are. Boil 3 gals. of water with 9 lbs. of sugar; when cold, pour it on the damsons. Mix in a basin 2 oz. German yeast with a tablespoonful

of sugar. It will turn liquid. Stir this in with the damsons and let it ferment. When the fermentation has ceased, strain it into a barrel, put in 6 oz. red tartar dissolved, and 1 oz. of isinglass. In six months it will be ready for tapping and bottling.

2. **Elderberry Wine.**—2 gals. of elderberries, 2 gals. of water, 6 lbs. of sugar, with 2 oz. each of cloves, ginger, cinnamon. Boil for two hours. Pass through a coarse sieve (cane or some large mesh) so that the berries are bruised. Let the tub or pan be large and deep. Mix German yeast as above, and finish as for damson wine.

3. **Red Currant and Strawberry Wine.**—2 gals. red currants, 2 gals. strawberries. Bruise the fruit but do not pick it, put it in a deep pan or tub, pour 4 gals. of boiling water on it, cover over and let it stand for three weeks. Strain off and put into a barrel with 12 lbs. sugar. Leave it for fourteen days to work, then put in the bung and keep four months.

4. **Parsnip Wine.**—Scrub, peel, and slice a quantity of parsnips. To every 4 lb. of parsnips add 1 gal. of water. Boil for one hour, drain the liquor off, pressing the water out of the parsnips. To each gal. of liquor add 3 lbs. of sugar and ½ oz. cream of tartar. Mix 2 oz. German yeast with the liquor and add to the wine in a pan; let it ferment, and when that is over put into a barrel with 1 lb. raisins. Cork down at the end of a fortnight. In six months it will be ready for use.

5. **Dandelion Wine.**—This is a delicate tonic wine. To 3 lbs. of dandelion flowers add 1 lb. of cowslips or primroses, or both mixed, the rind of one orange and the

juice. Boil with 2 gals. water for half an hour, add 6 lbs. of brown sugar, boil for another half-hour, stirring till the sugar is dissolved. Let it get nearly cold, and stir in 2 oz. German yeast. When the fermentation ceases, strain into a barrel, add raisins. Leave for two weeks and bung down. Ready for use in three months. Excellent in cases of dropsy and liver complaint.

CHAPTER XII.

FOODS FOR NOVEMBER, WITH TWO MENUS.

Vegetables.—As in October.

Fruits.—As in October.

Meats, Poultry, etc. — As in October, with doe venison, etc.

Fish.—As in October, with sprats, etc.

LESSON XXI.

1. **Ox Tail Soup.**—*Ingredients*—Ox tail, carrots, turnip, leek, celery, sweet herbs, prepared flour. *Utensils*—Knife, chopping-board, large saucepan.

Cut the tail into neat joints. To every lb. allow 1½ pint of cold water. Prepare and cut up two carrots, one small turnip, a leek, head of celery, and put into a saucepan with the tail, etc. Add a bunch of sweet herbs. Stew for six hours, thicken with prepared flour (page 22), season with salt and pepper, and serve.

2. **Sprats.**—Wipe 2 lbs. sprats and place them in even layers in a pie-dish with pepper-corns and a bay leaf between. Pour vinegar and water in equal quantities over, add a teaspoonful of salt and a half teaspoonful of sugar, bake twenty minutes. Cost 3d., enough for six or eight persons.

3. **Cheap Mutton Pie.**—*Ingredients*—1 lb. mutton

cuttings, onion, rice, mushroom, milk, potatoes, pepper, salt. *Utensils*—Knife, basin, pie-dish, metal spoon.

Peel and boil 1 lb. of potatoes, mash them with a little milk. Fill a pie-dish with mutton, sliced onion, and layers of cold boiled rice. Cover with water or second stock. Make a paste of the mashed potato. Bake in the oven one hour. Cost 10d., enough for six or eight people.

4. **Vegetable Pudding.**—*Ingredients*—½ lb. carrots, half a boiled potato, ¼ lb. currants, ¼ lb. suet, 2 oz. flour, milk, mixed spices, sugar. *Utensils*—Basins, chopping-board, wooden spoon, large grater.

Mash the boiled potatoes and put into the basin, next chop the suet, mixing it in with the potatoes, add two tablespoonfuls of sugar, the currants washed and dried; then grate the raw carrots in after being first scraped and washed, add the mixed spice to taste, with 2 oz. of flour and a little milk to moisten the whole. Put into a greased basin, boil for two and a half hours. Cost 5d., enough for six or eight people.

LESSON XXII.

1. **Lentil Soup.**—*Ingredients*—Lentils, onions, celery. *Utensils*—Knife, basin, saucepan.

Put ½ lb. lentils to steep in 1 quart of water twelve hours. Put them on to boil in a saucepan with 2 quarts, simmer for four hours, pass through a sieve; return to the saucepan, add half a head of celery chopped small, also ¼ lb. onion. Boil twenty minutes, season with pepper and salt. This will make 1 quart of nourishing soup. Those who like meat can make the soup with second stock, rabbit or fowl bones, etc., but it is good enough without. Cost 2d., enough for four people.

2. **Fish Dumpling.**—This is best made of fresh-water fish, as carp, etc. Clean and cut the fish in pieces, bone it, dip in seasoned flour, prepare with one teaspoonful of salt, half a teaspoonful of pepper, a little cayenne and powdered mace, to two tablespoonfuls of flour. Make a suet crust as at page 56. Line a pudding basin, fill with the fish, strewing in a minced shallot and sweet herbs, also a cupful of stock. Cover with paste, fasten over the top a cap of greased paper, steam for two hours. Serve with melted butter and parsley.

3. **Rolled Beef.**—*Ingredients*—Brisket of beef, boiled rice, onion, sage, suet. *Utensils*—Saucepan, knife, twine.

Take 3 lbs. brisket of beef. Have ready ¼ lb. of rice parboiled, mix with it 2 oz. of chopped suet, 2 oz. of onion, and a few leaves of sage well seasoned. Lay this on the inside of the meat, roll it up, fasten with twine, and stew for two hours. Thicken the gravy that it is stewed in. Carrots are generally served with this and are cooked along with the meat. It is good hot or cold.

4. **Hominy.**—Soak 1 lb. for twelve hours, and boil till tender in salt and water,—it will take about one hour,—drain, return to the saucepan with 2 oz. of butter or dripping and two tablespoonfuls of chopped parsley. Toss in the pan till they are quite covered with the fat and parsley, dish up at once.

5. **Matrimony Cakes.**—*Ingredients*—½ lb. of apples, ½ lb. currants, ¼ lb. sugar, 2 oz. of candied peel, nutmeg. Peel and slice the apples in thin rings; wash the currants, mince the peel. Make a paste as at page 56. Grease a plate, roll out the paste very thin, cover the

plate, put a layer of apples, then one of currants and peel, strew sugar over, put in a lump of butter over the top and cover over with paste. Bake in the oven. Grate lump sugar over the top, and eat hot or cold.

Lesson XXIII.

1. **Mullagatawny Soup.**—Take 1 quart of the liquor in which mutton, fowls, or rabbits have been boiled, add ½ lb. onions and a tart apple sliced, boil for half an hour, pulp through a sieve, season to taste, and then mix a packet of Geyclin's Mullagatawny Soup with a little cold water. Put the soup into the saucepan; when it boils, add the packet soup, boil ten minutes. This saves much trouble and expense.

2. **Fried Soles.**—Skin and clean the soles. Rub flour thoroughly over them so that it adheres to every portion of the fish. Fry in boiling fat or oil, drain on paper, garnish with fried parsley and lemon.

3. **Soused Pigs' Feet or Hocks.**—Stew the feet for four hours with enough water to cover them. Lift them out into a pie-dish, boil down the liquor to half with an onion, three cloves, pepper and salt to taste. Pour it over the feet, add enough vinegar to cover them, and eat hot or cold. If hot, put them into the oven to warm up after adding the vinegar.

4. **Baked Beetroot.**—Scrub a beetroot. Lay it in the oven, bake it till tender, peel and serve, cut in two, with hot vinegar and stock equal parts over.

5. **Barley Pudding.**—*Ingredients*—Barley, jam, sugar. *Utensils*—Pie-dish, spoon, saucepan.

Wash and steep in water for twelve hours ½ lb. of barley; drain off the water and stew or bake in 1 pint of milk, sweetened to taste. Grease a pie-dish, put in a thin layer of barley, next jam, then barley, etc. till the dish is full. Put a little dripping or butter here and there over the top; bake for half an hour. Serve with one of Freeman's custard powders prepared as directed on the packet.

CHAPTER XIII.

FOODS FOR DECEMBER, WITH TWO MENUS.

Vegetables.—Jerusalem artichokes, beet, broccoli, cabbages, carrots, celery, endive, leeks, onions, parsnips, potatoes, winter salads, savoys, spinach, truffles, turnips, and forced new potatoes, pease, asparagus, etc. from Malta.

Fruits.—As in November, with forced rhubarb, strawberries, etc.

Meats, Poultry, etc.—House lamb, pork, etc., as last month.

Fish.—As last month.

LESSON XXIV.

1. **Calf's Head Soup.**—*Ingredients*—Half calf's head, leek, carrot, turnip, celery, cloves, pepper-corns, salt. *Utensils*—Knife, basin, water, saucepan.

Clean the vegetables, and slice them. Thoroughly wash and prepare the half head, take out the brain. Lay it in the stewpan on the vegetables, and cover with clear, cold water. Put in the spices. As it gets hot carefully skim any froth off, add salt just as it comes to the boil. Carefully remove all oil rising to the top. Boil for six hours. Lift the head out, cut up the meat in dice of an inch square, strain off the liquor from the vegetables, put it and the meat back into the saucepan. When boiling, thicken with two tablespoonfuls of prepared white flour (page 14). Let the whole boil ten minutes. Put into the tureen ¼ pint of cream, and a tablespoonful of very finely minced parsley. Pour the soup on this and serve.

2. **Tinned Salmon.**—Place the tin without opening it in a saucepan containing boiling water. Boil for twenty minutes. Lift the tin out. Hold it with a cloth and open with a tin-knife. Put the salmon on a hot dish, cover with egg sauce, prepared as at page 54. Cost 7½d., enough for four to six persons.

3. **Roast Goose.**—*Ingredients*—Goose, potatoes, sage, onions, bread crumbs, salt, pepper. *Utensils*—Basin, knife, paper skewers.

Boil 1 lb. of potatoes, mash them with ½ lb. onions, peeled, sliced, and steeped in salt and water for two hours. Make 2 oz. bread crumbs, dry and powder some sage leaves. They are best sifted through a wire sieve or gravy strainer (it keeps the woody stalks from being mixed with the stuffing), one teaspoonful of salt, half a teaspoonful of black pepper. Mix all together with a tiny quantity of milk. Stuff the goose, truss it, and roast as at page 17, covering the breast with writing paper for the first half-hour. Basting is very essential. Serve with apple sauce and good stock, thickened with prepared flour (page 22). Ten minutes before the goose is taken from the fire, dredge over with a little flour. Cost about 9d. or 10d. per lb.

4. **Roast Potatoes.**—Scrub large potatoes. See that they are sound. Place in a hot oven and bake one hour. Serve in a hot napkin. Put no cover over them when sending to table, or the steam will spoil them. This is the most wholesome method of dressing potatoes and beetroots.

5. **Cottagers' Plum Pudding.**—*Ingredients*—Flour, bread crusts, currants, raisins, sugar, egg powder, raw carrot, raw potato. *Utensils*—Chopping-board, knife, basin, spoon, grater.

Wash and pick the currants and leave them to drain. Put 3 oz. of bread crusts to soak in a basin of cold water, and put a saucer on the top to keep them under the water. Next stone the raisins, mince the suet, and then express the water from the bread crusts. Make them very dry. Wipe out the basin, put the bread back. Wash and scrape a carrot, grate it into the basin with the bread. Peel a potato, rinse it and grate it also, and mix with the bread. Put in 3 oz. of flour and one teaspoonful of baking powder; mix well, and then add currants, suet, raisins, etc. If needed, moisten with water, and add two tablespoonfuls of sugar. Grease a basin, three parts fill with the pudding, steam for three and a half hours. Cost 8d., enough for twelve people. *N.B.*—This pudding is superior to many richer makes.

Lesson XXV.

1. **Plum Porridge.**—*Ingredients*—Beef, mutton, or salt pork, raisins, barley, nutmeg, pepper, salt, onion. *Utensils*—Knife, basin, saucepan.

Wash and steep ½ lb. Scotch barley (or pearl barley, if appearance and not nutriment is studied) for twelve hours in 1 pint of cold water. Put 2 lbs. of either shin of beef, neck of mutton, or lean salt pork, in a saucepan with 2 quarts of cold water and the steeped barley, also ½ lb. onions shred finely (or leeks answer as well). Stew for four hours, take the meat out, cut it into dice, add to the soup 1 lb. of stoned raisins; boil till they are tender, and serve hot, first seasoning with salt, pepper, and nutmeg.

2. **Mayonaise of Fish (Cold).**—Plain boil any large fish or the middle cut, as at page 16. Let it get quite cold. Prepare vegetables *à la jardinière* as at page 54, including a baked beetroot, which cut and stamp out to match the others. Prepare the following sauce :—Three yolks of eggs in a clean basin, drop in by single drops at a time ¼ pint of oil (best olive), stir slowly with a wooden spoon one way till it is so thick that the spoon will stand upright in it, season with cayenne and salt, add a teaspoonful of tarragon vinegar drop by drop. Pour this over the fish and the vegetables, which should have been tastefully arranged round the dish. Garnish with watercress and sliced lemon.

3. **Roast Hare.**—Paunch the hare and clean it. Wash the liver, etc., and put them into a saucepan to boil. Rub through a sieve when tender. *Ingredients*—Boiled liver, bread crumbs, suet, sweet herbs, lemon rind, pepper, nutmeg, salt, egg, lean ham, shallot, dripping. *Utensils*—Wire sieve, knife, nutmeg-grater, roasting apparatus, needle and thread.

Take the liver and put it into a basin with ½ lb. bread crumbs passed through a wire sieve, also ½ lb. mutton suet, and 2 oz. lean ham minced finely, the grated rind and strained juice of a lemon, and one tablespoonful chopped parsley, marjoram, and shallot, Mix together and moisten with an egg. Stuff the hare, sew it up and truss, have plenty of melted dripping in the dripping tin, fix the hare on to the jack, give it a good covering with the melted fat, roast as at page 17. Cost from 5s. to 6s., enough for twelve to fourteen people. Serve with good brown gravy and red currant jelly.

4. **Cottagers' Hare.**—*Ingredients*—Hare, Spanish or large onions, carrot, fat bacon, flour, pepper, salt.

Utensils—Knife, large brown jar with lid or very deep basin.

Cut up the hare into joints, dip each piece in browned flour (page 22). Lay in the bottom of the jar two thin slices of fat bacon and a carrot, also one onion sliced. Put in the hare, lay on the top 1 lb. of onions peeled and sliced, and over them strew salt, pepper, and finish with two thin slices of fat bacon. Put on the lid close and bake two hours in a moderate oven. It requires no water or gravy. Hare dressed in this fashion is a most juicy and an exquisite family dish. Rabbits and fowl can with advantage be similarly dressed.

5. **Tomatoes à la Kingsbury.**—*Ingredients*—Tomatoes, eggs, bread, pepper, cayenne, salt. *Utensils*—Spoon, basin, saucepan.

Take four tablespoonfuls of tinned tomatoes, put them into a saucepan with seasoning of pepper, salt, and cayenne to taste, let them come to the boil, break in two eggs and stir till they become of the consistency of scrambled eggs. Serve on buttered toast. Cost 3d., enough for four persons.

6. **Mince Meat.**—Mince 1 lb. cold roast or boiled lean meat, 1 lb. of mutton suet, 1 lb. of raisins stoned and minced, 1 lb. of currants washed and dried, 1 lb. of moist sugar, ¼ lb. of candied peel minced, the grated rind and strained juice of one lemon and one orange. Mix well together. The meat may be left out if preferred.

END OF BOOK III.

WELLCOME LIBRARY INSTITUTE

TRAINING COLLEGES

General Certificate Examinations.

BOOKS TO SUIT THE ABOVE.

THE following are brought with confidence under the notice of the public as by far the most complete list of meritorious books of the kind ever issued :—

GRAMMAR AND COMPOSITION.

	s.	*d.*
Morell's Practical Composition, ...	3	0
Curie's Practical Grammar, ...	1	6
Complete Key to Morell's Grammar and Analysis, .	4	0
Meiklejohn's Book of English—Origin and Growth of the Language, ...	1	0
Morell's Shakspeare's Merchant of Venice, Notes (1879), ...	1	0

SCHOOL MANAGEMENT.

Steele's Oral Teaching : Hints and Models, . .	1	6

BRITISH HISTORY.

Ross's Comprehensive History of England, . .	1	0
Ross's Biographical History of England—Biographical Sketches of all Persons of Note, . . .	0	9
Ross's Multum in Parvo History of Scotland, . .	0	6

GEOGRAPHY.

Morell's Senior Geography, ...	3	0
Williams' Geography and History of British Colonies,	1	0

EUCLID.

Deductions, Riders and Exercises on Euclid, Books I.–IV. Contains about 200 Deductions worked out in full as models for the Student, and text of Euclid, Books I.–IV., ...	3	6

ALGEBRA AND MENSURATION.

Sparks' Algebra for Pupil Teachers, ...	1	6
Elliot's Algebra, ...	2	6
,, ,, Complete Key to, ...	2	6
Elliot's Mensuration and Geometry, ...	2	6
Ditto ditto, Key to,—Solutions worked out, . .	2	6
Elliot's Logarithms, ...	2	6
,, Logarithms, Complete Key to, ...	2	6
,, Logarithmic Tables, ...	1	0

LATIN.

	s.	d.
Easy Latin Grammar and Cæsar, Book I., with Notes, Literal Translation, etc., ...	1	0
Fennell's Latin Grammar—New Pronunciation, .	1	0

GREEK.

Adams' Easy Greek Grammar, ...	1	0

FRENCH.

Easy French Grammar and Reading Book and Vocabulary, ...	1	0
Besant's French Grammar, ...	1	0

SPELLING AND DICTATION.

Spelling and Dictation Class Book, ...	1	3

MUSIC.

Easy Grammar of Music, ...	1	0
Book of Musical Harmony, ...	1	0

DOMESTIC ECONOMY

Stoker's 'Home Comfort,'	2	6
,, Domestic Economy, ...	1	0
,, Useful Recipes, ...	0	4
Easy Domestic Economy, ...	1	0

SPECIAL SUBJECTS.

Easy Manual of Mechanics, ...	1	0
Thorpe's Book of Mechanics (Statics), . . .	1	0
Baynes' Book of Heat, ...	1	6
Hick's Book of Chemistry (Inorganic), . . .	1	0
Smith's Practical Chemistry—Covers the whole of the Honours Course, Science and Art Department, .	2	0
Easy Manual of Animal Physiology, ...	1	0
Easy Manual of Botany, ...	1	0
Williams' Physiography, ...	2	0

Elliot's Advanced Algebra, 5s. Key, 5s.
,, Practical Geometry, 1s. Key, 2s 6d.
,, Practical Geometry and Mensuration, 5s. Key, 6s.
,, Complete Logarithms and Trigonometry, 5s. Key, 3s.

☞ *Any of the above free by post for published price in Stamps or P.O.O., from the Publishers,*

W. STEWART & CO., The Holborn Viaduct Steps, London, E.C

Or can be Ordered through any Bookseller.

INFANT SCHOOL SERIES.

ATLASES, ETC.

Little by Little, or First School, PRIMER. Cloth, 3d.

The Child at School, Illustrated, being an Introduction to Standard I., New Code, with Object Alphabet, Object Pictures, Object Lessons, Arithmetic, Picture Letter, and Script. Cloth, 6d. Also in parts—Part I., 3d.; Part II., 3d.

Lessons in Arithmetic and Printing for Infant and Kindergarten Schools, with paper ruled for practising. 2d.

The Object Alphabet Card, 1d.

Picture Letter on superior toned paper, for the amusement and instruction of children. 1d.

The Graphic Letter-Book, being a series of beautifully engraved copies of Letters from pupils to their schoolfellows, parents, and friends, with superior ruled paper for copying the same, being specially designed to teach children the useful art of writing Letters. 2d.

First Four Rules in Arithmetic. With very numerous Exercises. Cloth limp, 3d.

Stewart's Scholastic Atlas, with fourteen beautifully engraved maps and diagrams. Plain, 2d.; coloured, 3d.

Stewart's Scholastic Atlas, 24 pp., fcap. 4to, with twenty-two beautifully engraved and full coloured maps and diagrams, being by far the best and cheapest Atlas at the money published in this country. 6d.

Stewart's Scholastic Atlas of Astronomy, Ethnology, Natural History, Statistics, Physical and Political Geography. Richly coloured and strongly bound in cloth. 1s.

The Scholastic Geography, with chromo-lithographic diagram, sixteen sketch maps for the pupil to copy, and various plans, etc. Cloth, 6d.

Places and Peoples, or Geography MADE INTERESTING, being a new School Geography written on an entirely new plan, comprising a considerable amount of information in regard to social customs, etc., not to be found in any other work of the kind, and containing numerous maps, illustrations, and diagrams. Strongly bound in cloth, 1s.

W. STEWART & CO., HOLBORN VIADUCT STEPS, E.C.

NEW EDITION.

STEWART'S

COMPLETE KEY TO MORELL'S GRAMMAR AND ANALYSIS,

WITH THE EXERCISES IN ANALYSIS WORKED OUT IN FULL.

'The work is of great importance to those who would thoroughly understand the subject of Grammatical Analysis, and stand well therein in the Public Examinations.'

Free by Post for 4s. *in Post Office Order, from*

W. STEWART & CO., The Holborn Viaduct Steps, London, E.C.;
Or can be ordered from any Bookseller.

Recently published, price 3s. 6d., post free,

DEDUCTIONS, RIDERS, AND EXERCISES,

BASED UPON

Euclid, Books I.-IV., and containing at end for Reference the Text of Euclid, Books I.-IV.

200 'Deductions' *worked out* in *Full*, from Papers Set in Cambridge Mathematical Tripos, London University Matriculation, Queen's Scholarship, etc.

⁂ The clearest and most exhaustive work on 'Deductions' ever published.

W. STEWART & CO., The Holborn Viaduct Steps, London, E.C.

Just published, price 3s. 6d., post free,

Complete Guide to Matriculation

IN LONDON UNIVERSITY, IN ARITHMETIC AND ALGEBRA.

By A. L. SPARKES, B.A. (Lond.), F.C.S.

This work deals with all the specialties of the London University Arithmetic and Algebra Papers in a clear and exhaustive manner, and contains extracts from 35 years' Papers with *Answers*, and, where deemed necessary, *Solutions*.

W. STEWART & CO., The Holborn Viaduct Steps, London, E.C.

‘This Series has the double merit of being very cheap and at the same time very good.’

SCHOLASTIC READING BOOKS.

(Specially drawn up for the New Code.)

ILLUSTRATED.

Primer No. I.,	2d.
Primer No. II.,	3d.
Standard I.,	5d.
Standard II.,	6d.
Standard III.,	9d.
Standard IV.,	1s. 0d.
Standards V. and VI.,	1s. 6d.

W. STEWART & CO.,
THE HOLBORN VIADUCT STEPS,
LONDON, E.C.

⁂ *‘Teachers may use this Series, confident that they are using books suited exactly to the requirements of the present Code.’*